Nearshore Physical and Chemical Oceanographic Data from Queen Charlotte Strait and Broughton Strait 1979 – 1981

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Ministry of Environment
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BC marine resources branch

NEARSHORE PHYSICAL AND CHEMICAL OCEANOGRAPHIC DATA FROM QUEEN CHARLOTTE STRAIT AND BROUGHTON STRAIT 1979 - 1981

by

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ABSTRACT

Temperature, secchi depth, salinity, ortho-phosphate and combined nitrite-nitrate nitrogen data are presented in tabular and graphical formats for seventeen stations in the nearshore waters of western Queen Charlotte Strait and Broughton Strait.

Data were collected between May, 1979 and October, 1981.

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INTRODUCTION

Field crews of the Marine Plant Management and Development Section, Marine Resources Branch monitored various physical and chemical aspects of the oceanographic environment at seventeen stations (Figure 1) located in western Queen Charlotte Strait and Broughton Strait between May, 1979 and October, 1981. The environmental monitoring program was carried out concurrently with four kelp research projects; hence sampling sites were located in nearshore waters, generally in or adjacent to beds of the canopy-forming kelps Macrocystis integrifolia (Bory) and Nereocystis luetkeana (Mertens) Postels and Ruprecht or the recumbent kelps Laminaria groenlandica Rosenvinge and Cymathere triplicata (Postels and Ruprecht) J. Agardh. Descriptions of the sampling sites are given in Appendix I.

The physical variables monitored were temperature and secchi depth; chemical variables included salinity, ortho-phosphate and combined nitrite-nitrate nitrogen.

The sampling schedule and sample depths were prescribed by the needs of the various kelp research projects. Sampling was accomplished twice during March, 1981 and roughly weekly during the main 1980 and 1981 field seasons (May through mid-October). Sampling was carried out at approximately two hour intervals for eight (July, 1980) and twenty (August, 1980) hour periods at Stations C, G, J and M to establish the range of values exhibited by the monitored parameters over these time periods at specific sites. Temperature data were accumulated almost continuously at Station M between June, 1980 and mid-September, 1981 and at Station C from May - August, 1979 and from May -September, 1980.

This report presents the data acquired during the environmental monitoring progam in tabular and graphical formats. It is our pleasure to make these data available to all possible users in recognition of the paucity of this type of information for the nearshore waters of British Columbia. The data have been placed on permanent file as part of the EQUIS data base administered by the Waste Management Branch, Ministry of Environment and may be accessed with the permission of the authors.

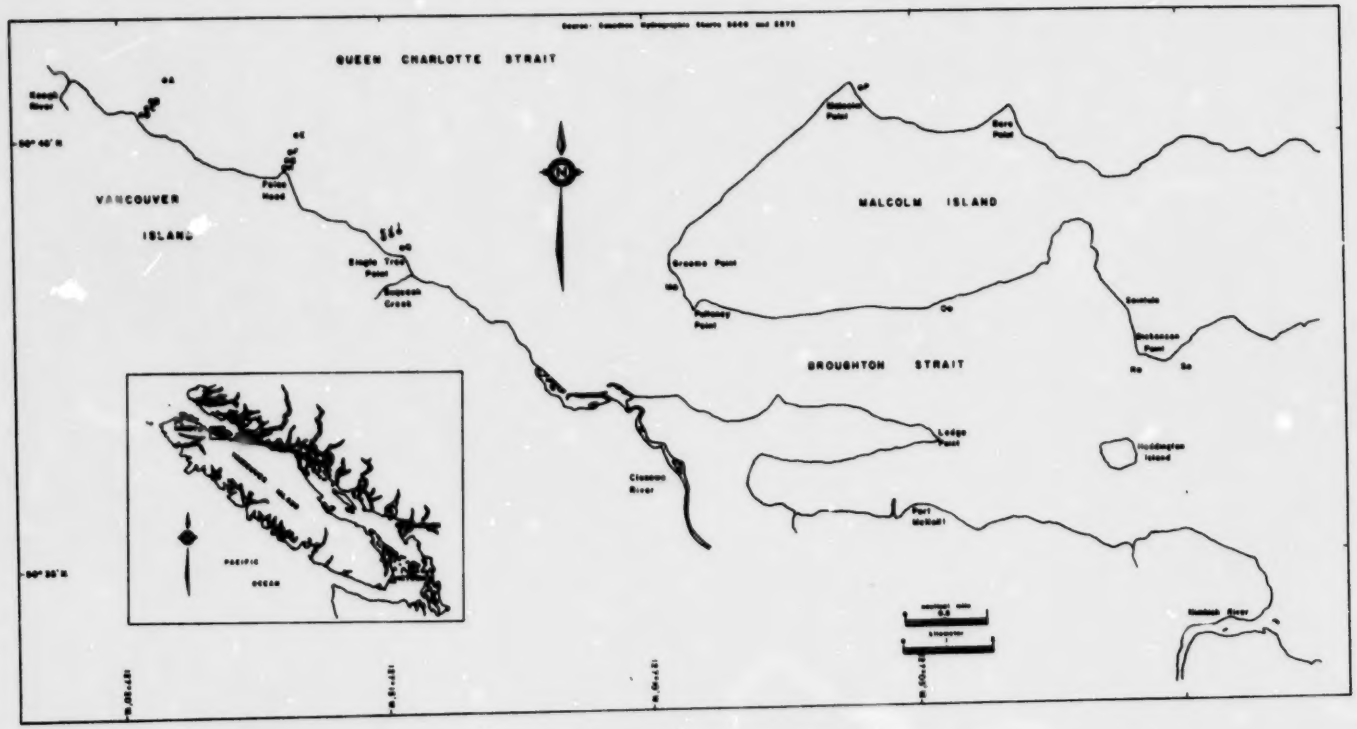

Figure 1. Location of stations where selected oceanographic variables were monitored, 1979-1981.

METHODS AND MATERIALS

Temperature and salinity were measured with a portable salinometer (Beckman R55-3) equipped with a probe which could be lowered to the required depth. The instrument had an accurancy of $\pm$ 0.50°C and $\pm$ 0.30°/oo. At each site the bottom depth was measured with a graduated stainless steel cable and recorded to the nearest 0.1 m. A Nisken bottle was attached to this cable; water samples for nutrient analyses were collected at predetermined depths (Appendix I).

Water for nutrient analysis was immediately filtered through glass wool into nalgene bottles, which were rinsed three times before the bottle was allowed to fill, and then stored on ice for up to six hours before being frozen. The frozen samples were later transported on dry ice to Canadian Benthic Limited in Bamfield, British Columbia, for determination of ortho-phosphate and combined nitrite-nitrate nitrogen levels. The samples were analysed by a colorimetric technique described in Strickland and Parsons (1972) using a Technicon Auto-analyser II. Nutrient values reported herein are the means of two replicate measurements. The analytic equipment employed had the following level of accuracy:

a. for combined nitrite-nitrate nitrogen the standard deviation (SD) of 10 samples with a mean concentration of 5.00 ug-at.ℓ^{-1} was 0.06 ug-at.ℓ^{-1}; and

b. for ortho-phosphate the SD of 10 samples having a mean concentration of 1.00 ug-at.ℓ^{-1} was 0.05 ug-at.ℓ^{-1}.

One Ryan J-180 thermograph was installed on the sea bottom at Station M and a second suspended at 1 m below the sea surface at Station C to provide continuous records of temperature at these sites. These instruments have an accuracy in recording time of $\pm$ 0.2% of the running time and a temperature recording accuracy of $\pm$ 2% of the full scale. Continuous temperature records are only available between May and September, 1979 and May and October, 1980 at Station C, while such data are available from June, 1980 through September, 1981 at Station M except for a short hiatus in January, 1981.

Except for the 8 and 20 hour sampling programs, all measurements and sampling were accomplished between 0800 and 1600 hours (PST).

PRESENTATION OF DATA

Secchi depth, temperature, salinity, combined nitrite-nitrate nitrogen and ortho-phosphate data are tabulated by sample date and depth for each station in Appendix II. Time series graphs of all available data for each station, for each of the above parameters, except secchi depth, are given in Appendix III.

Tabulations of environmental data, in the same format used in Appendix II, are given in Appendices IV and VI for Stations C, G, J and M where sampling took place at approximately 2 hour intervals over an 8 hour period and a 20 hour period, respectively. These data are illustrated in time series graphs in Appendices V and VII for the 8 hour and 20 hour monitoring periods respectively.

Time series graphs of all available temperature data as recorded by Ryan J-180 thermographs at Stations C and M, are given in Appendix VIII.

LITERATURE CITED

Strickland, J. D. H. and T. R. Parson. 1972. A Practical Handbook of Seawater Analysis. Fish Res. Bd. Can, Bull. 167. 310 pp.

APPENDIX 1

Descriptions of sampling sites. Latitude and longitude indicate general location of site. Distances offshore were estimated from Canadian Hydrographic Service charts which show the shoreline at datum.

SITE	LATITUDE	LONGITUDE	DESCRIPTION	SAMPLING DEPTHS
A	50°40'06"	127°19'12"	Halfway between False Head and Port Hardy Airport. 1 km from shore, at about 20 m depth to bottom.	surface, midwater, and 20 m.
B	50°40'06"	127°19'12"	Halfway between False Head and Port Hardy Airport. 600 m from shore, outer edge of Macrocystis bed.	surface, midwater, and at bottom.
C	50°40'06"	127°19'12"	Halfway between False Head and Port Hardy Airport. 400 m from shore, inside bed Macrocystis bed.	surface 1,2,4 m and bottom.
D	50°40'06"	127°19'12"	Halfway between false Head and Port Hardy Airport. 75 m from shore, inner edge of Macrocystis bed.	surface, midwater and bottom.
E	50°39'42"	127°16'48"	At False Head, 500 m from shore. Depth to bottom approximately 20 m.	surface, midwater and 20 m.
F	50°39'42"	127°16'48"	At False Head, 250 m from shore, outer edge of Macrocystis bed.	surface, midwater and bottom.
G	50°39'42"	127°16'48"	At False Head, 150 m from shore, inside Macrocystis bed.	surface 1, 2, 4 m depth and bottom
H	50°39'42"	127°16'48"	At False Head, 75 m from shore, inner edge of Macrocystis bed.	surface, midwater and bottom.
I	50°38'48"	127°14'54"	Off the kelp bed north of Single Tree Point, 300 m from shore.	surface and bottom
J	50°38'48"	127°14'54"	Off kelp bed north of Single Tree Point, 150 m from shore.	surface and bottom.

SITE	LATITUDE	LONGITUDE	DESCRIPTION	SAMPLING DEPTHS
K	50°38'48"	127°14'54"	Off kelp bed north of Single Tree Point, 100 m from shore.	surface and bottom.
L	50°37'54"	127°09'18"	West side of Pulteney Point, at 50 m from shore.	surface and bottom.
O	50°37'48"	127°04'30"	Across Broughton Strait from Ledge Point, west of Rough Bay at 100 m from shore.	surface and 2 m.
P	50°40'24"	127°06'00"	In Bay 300 m east of Malcolm Point at 50 m from shore.	surface and bottom.
Q	50°38'42"	127°14'42"	Off kelp bed at Single Tree Point 75 m from shore.	surface and bottom.
R	50°37'06"	127°00'36"	West of Dickenson Point by edge of kelp patch, at 150 m from shore.	surface, 3 m and bottom.
S	50°37'15"	127°00'06	East of Dickenson Point at 200 m from shore.	surface, 3 m and bottom.

APPENDIX II

Secchi depth, temperature, salinity, combined nitrite-nitrate nitrogen and ortho-phosphate data by station, date and sample depth, May, 1980 - October, 1981.

ENVIRONMENTAL MONITORING DATA FOR STATION A

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
140580	.	0.00	.	.	.	6.86	0.84
140580	.	9.50	.	.	.	14.83	1.43
140580	19.00	18.00	5.50	.	.	11.61	1.22
210580	.	0.00	.	.	.	7.98	1.01
210580	.	8.50	.	.	.	10.62	1.17
210580	17.00	16.00	8.00	.	.	11.00	1.18
280580	.	0.00	.	.	.	0.26	0.64
280580	.	10.00	.	.	.	5.19	0.88
280580	20.00	19.00	3.00	.	.	8.36	0.85
40680	.	0.00	.	.	.	39.06	0.54
40680	.	9.00	.	.	.	7.14	0.90
40680	19.00	18.00	9.00	.	.	19.71	1.04
110680	.	0.00	.	.	.	0.21	0.32
110680	.	10.00	.	.	.	0.80	0.68
110680	20.00	19.00	3.50	.	.	11.93	1.48
180680	.	0.00	.	.	.	3.25	0.57
180680	.	8.00	.	.	.	8.67	0.97
180680	15.40	14.40	4.50	.	.	12.03	1.21
250680	.	0.00	.	.	.	0.14	0.15
250680	.	9.00	.	.	.	13.10	1.26
250680	17.80	16.80	3.50	.	.	9.18	1.06
90780	.	0.00	.	12.89	28.00	2.68	0.63
90780	.	10.00	.	11.02	28.10	3.86	0.68
90780	20.70	19.70	4.00	.	.	12.30	1.39
160780	.	0.00	.	11.12	30.67	9.22	0.93
160780	.	8.00	.	9.70	31.90	14.90	1.52
160780	16.50	15.50	4.00	.	.	6.76	1.14
230780	.	0.00	.	13.50	28.36	0.09	0.11
230780	.	7.50	.	10.14	31.49	10.20	1.08
230780	15.40	14.40	2.00	.	.	12.80	1.43
10880	.	0.00	.	12.60	30.10	0.07	0.11
10880	.	9.00	.	9.60	32.00	5.66	0.80
10880	18.00	17.00	6.50	9.50	32.00	13.70	1.45
60880	.	0.00	.	12.32	31.59	4.28	0.54
60880	.	7.00	.	10.36	31.43	9.52	0.94
60880	14.00	13.00	2.00	10.27	31.48	11.20	1.09
140880	.	0.00	.	10.98	31.22	3.33	0.90
140880	.	7.50	.	10.11	31.64	7.11	0.79
140880	15.00	14.00	4.50	9.76	32.19	8.79	1.01
210880	.	0.00	.	11.65	31.86	4.21	0.62
210880	.	9.50	.	10.29	31.44	7.75	0.89
210880	18.80	17.80	4.80	.	.	9.07	1.32
260880	.	0.00	.	11.07	31.15	1.20	0.37
260880	.	9.00	.	9.59	31.81	9.38	1.17
260880	18.70	17.70	7.00	.	.	11.57	1.42
30980	.	0.00	.	9.10	32.60	14.74	1.49
30980	.	9.50	.	8.80	32.85	20.30	1.85
30980	19.00	18.00	.	8.70	32.85	14.05	1.43
100980	.	0.00	.	10.44	30.59	14.36	1.23
100980	.	8.00	.	9.37	32.18	14.65	1.52
100980	16.10	15.10	11.50	.	.	10.95	1.31
170980	.	0.00	.	10.59	31.44	15.19	1.54
170980	.	8.50	.	10.47	31.67	11.61	1.33
170980	16.80	15.80	8.40	.	.	16.89	1.73

ENVIRONMENTAL MONITORING DATA FOR STATION A

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
230980	.	0.00	.	9.40	31.90	14.80	1.35
230980	.	9.00	.	9.03	32.32	24.05	2.01
230980	18.00	17.00	12.80	.	.	14.13	1.50
201080	.	0.00	.	8.85	32.13	10.14	1.25
201080	.	10.00	.	8.83	32.62	15.63	1.54
201080	20.00	19.00	12.00	.	.	16.08	1.52
41280	.	0.00	.	7.70	31.30	21.75	1.89
41280	.	9.50	.	7.50	31.00	13.16	1.37
41280	20.00	19.00	14.00	7.70	31.30	23.63	2.31
503A1	.	0.00	.	7.00	30.69	10.89	1.22
503A1	.	9.00	.	7.42	31.10	14.41	1.38
503A1	18.50	17.50	9.50	.	.	8.68	1.01
260381	.	0.00	.	8.12	31.60	11.46	1.22
260381	.	9.00	.	8.12	31.74	13.07	1.33
260381	16.50	17.50	.	.	.	12.57	1.21
150581	.	0.00	.	9.44	29.10	2.01	0.48
150581	.	9.70	.	9.11	29.28	6.94	0.98
150581	19.40	18.40	4.30	.	.	13.64	1.45
240581	.	0.00	.	6.94	32.10	10.72	1.12
240581	.	8.00	.	6.38	32.22	12.40	1.46
240581	16.10	15.10	9.30	.	.	16.08	1.72
290581	.	0.00	.	10.88	31.18	0.10	0.30
290581	.	9.00	.	9.08	31.64	8.71	0.95
290581	18.00	17.00	2.50	.	.	9.38	1.16
60681	.	0.00	.	6.87	32.22	10.39	1.22
60681	.	10.00	.	8.90	32.41	5.96	1.09
60681	19.20	18.20	18.00	9.07	32.57	10.24	1.13
120681	.	0.00	.	10.42	31.68	10.39	1.22
120681	.	10.00	.	9.40	32.06	7.50	1.22
120681	20.80	19.80	9.30	9.26	32.16	6.77	1.09
190681	.	0.00	.	9.10	29.10	7.12	0.87
190681	.	9.00	.	8.92	29.32	8.66	1.09
190681	18.90	17.90	9.50	8.90	29.20	11.20	1.32
50781	.	0.00	.	10.85	31.43	2.50	0.52
50781	.	8.00	.	10.80	31.42	4.12	0.57
50781	16.40	15.40	6.50	.	.	4.43	0.61
120781	.	0.00	.	12.54	29.56	3.54	0.30
120781	.	9.40	.	9.79	30.35	10.39	0.87
120781	18.70	17.70	5.00	.	.	15.01	1.26
190781	.	0.00	.	11.91	31.55	0.46	0.22
190781	.	9.00	.	11.36	31.40	5.92	0.57
190781	17.50	16.50	2.50	.	.	7.96	0.95
90881	.	0.00	.	13.42	31.40	0.19	0.09
90881	.	9.00	.	9.96	32.77	12.13	1.02
90881	19.00	18.00	1.80	.	.	13.08	1.32
160881	.	0.00	.	13.53	30.71	0.12	0.09
160881	.	10.00	.	10.82	31.42	8.85	0.78
160881	19.50	18.50	5.50	.	.	10.20	1.04
70981	.	0.00	.	11.46	30.24	6.88	0.82
70981	.	9.00	.	9.62	31.65	10.48	1.21
70981	19.00	18.00	2.00	9.91	31.54	13.84	1.53
140981	.	0.00	.	11.26	31.52	3.96	0.68
140981	.	9.00	.	10.68	32.08	9.49	1.26
140981	17.50	16.50	3.80	.	.	12.02	1.42

ENVIRONMENTAL MONITORING DATA FOR STATION B

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
140580	.	0.00	.	.	.	3.70	0.66
140580	10.20	9.20	6.30	.	.	4.96	0.76
210580	.	0.00	.	.	.	5.56	0.76
210580	.	4.00	.	.	.	7.10	1.07
210580	8.10	7.10	7.30	.	.	9.24	1.17
280580	.	0.00	.	.	.	0.62	0.33
280580	.	5.00	.	.	.	0.73	0.37
280580	10.50	9.50	3.00	.	.	2.23	0.59
40680	.	0.00	.	.	.	2.30	0.60
40680	.	4.00	.	.	.	13.63	0.46
40680	8.00	7.00	5.00	.	.	5.72	0.90
110680	.	0.00	.	.	.	0.21	0.27
110680	.	4.50	.	.	.	0.21	0.53
110680	9.50	8.50	3.40	.	.	2.65	0.76
180680	.	0.00	.	.	.	0.22	0.28
180680	.	3.50	.	.	.	1.30	0.48
180680	7.20	6.20	3.50	.	.	4.72	0.75
250680	.	0.00	.	.	.	0.14	0.29
250680	.	5.00	.	.	.	3.96	0.55
250680	10.20	9.20	2.70	.	.	4.08	0.68
90780	.	0.00	.	12.21	28.20	1.34	0.48
90780	.	4.00	.	11.40	28.19	4.17	0.69
90780	8.00	7.00	3.80	10.67	28.49	6.37	0.96
160780	.	0.00	.	12.26	30.35	2.68	0.56
160780	.	3.50	.	10.02	31.84	6.44	1.02
160780	7.50	6.50	4.30	9.29	32.05	11.50	1.28
230780	.	0.00	.	13.74	26.35	0.09	0.12
230780	.	5.00	.	11.09	31.51	6.87	0.93
230780	9.60	8.60	1.70	9.58	31.81	11.30	1.18
10880	.	0.00	.	12.60	30.90	0.13	0.25
10880	.	4.00	.	10.10	31.60	8.06	0.93
10880	8.00	7.00	5.30	10.20	31.30	10.30	1.14
60860	.	0.00	.	13.86	31.63	0.10	0.15
60880	.	4.00	.	11.48	31.72	0.26	0.20
60880	8.50	7.50	2.10	11.15	31.69	0.81	0.23
140880	.	0.00	.	11.83	31.35	1.03	0.42
140880	.	4.50	.	10.59	31.50	5.60	0.69
140880	9.20	8.20	3.10	9.90	31.85	6.59	0.81
210880	.	0.00	.	12.35	31.27	2.19	0.58
210880	.	4.50	.	11.26	31.54	2.23	0.68
210880	9.10	8.10	3.00	10.56	31.58	6.60	0.92
260880	.	0.00	.	11.62	31.11	0.36	0.47
260880	.	5.00	.	9.73	31.62	14.04	1.41
260880	10.10	9.10	5.50	9.73	31.79	15.64	1.54
30980	.	0.00	.	9.65	32.20	9.09	1.01
30980	.	4.00	.	9.05	32.70	15.83	1.53
30980	9.40	8.40	4.70	8.80	32.50	19.49	1.86
100980	.	0.00	.	11.17	30.47	6.62	0.87
100980	.	4.00	.	9.99	31.49	13.99	1.45
100980	8.10	7.10	8.10	9.60	32.02	7.03	1.17
170980	.	0.00	.	11.99	31.09	10.32	1.26
170980	.	4.50	.	10.92	31.41	14.56	1.64
170980	8.90	7.90	7.20	10.20	31.60	14.96	1.63
230980	.	0.00	.	10.28	31.03	13.51	1.35
230980	.	5.00	.	9.31	32.12	16.43	1.48
230980	10.20	9.20	10.20	9.35	31.41	13.17	1.40

ENVIRONMENTAL MONITORING DATA FOR STATION B

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DATE	BUTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
201080	.	0.00	.	9.22	32.23	16.75	1.59
201080	.	5.00	.	8.99	32.27	18.90	1.81
201080	10.60	9.60	10.60	9.02	32.65	14.12	1.32
41280	.	0.00	.	7.30	30.50	20.00	1.87
41280	.	4.00	.	7.00	30.50	20.00	1.97
41280	10.50	9.50	7.50	7.00	30.50	23.20	2.13
50381	.	0.00	.	7.28	31.00	13.94	1.46
50381	.	5.00	.	7.35	31.05	8.55	1.12
50381	9.80	8.80	9.80	7.40	31.10	19.57	1.76
260381	.	0.00	.	8.26	31.72	6.70	0.90
260381	.	5.00	.	8.20	31.84	9.72	1.03
260381	9.70	8.70	.	8.08	31.84	6.23	1.02
150581	.	0.00	.	9.92	28.59	3.18	0.60
150581	.	5.60	.	9.32	29.32	9.05	1.12
150581	11.20	10.20	4.20	9.01	29.34	12.50	1.58
240581	.	0.00	.	9.58	31.96	6.70	0.90
240581	.	3.50	.	8.72	31.10	8.71	1.21
240581	7.10	6.10	6.00	8.70	31.97	14.91	1.64
290581	.	0.00	.	12.75	30.42	0.13	0.47
290581	.	4.00	.	11.20	31.29	0.07	0.43
290581	8.10	7.10	2.50	10.75	31.65	0.23	0.59
60681	.	0.00	.	9.12	31.46	7.77	1.09
60681	.	3.00	.	8.90	33.36	9.43	0.96
60681	6.50	5.50	6.50	8.94	32.75	8.85	1.43
120681	.	0.00	.	10.42	31.46	9.54	0.96
120681	.	5.00	.	9.83	32.10	14.31	1.37
120681	9.70	8.70	6.00	9.28	32.23	8.77	1.04
190681	.	0.00	.	9.60	28.62	5.31	0.65
190681	.	3.20	.	9.32	28.84	13.74	1.50
190681	6.40	5.40	2.10	9.00	29.12	8.93	1.13
50781	.	0.00	.	11.74	31.42	1.73	0.44
50781	.	4.50	.	10.99	31.53	4.62	0.70
50781	9.00	8.00	5.50	10.90	31.66	4.23	0.65
120781	.	0.00	.	12.96	29.01	5.00	0.57
120781	.	4.70	.	12.27	29.88	8.47	0.78
120781	9.40	8.40	4.50	10.70	30.12	6.16	0.65
190781	.	0.00	.	13.92	31.02	0.19	0.22
190781	.	4.00	.	12.86	31.25	0.08	0.14
190781	8.00	7.00	3.30	11.61	31.96	3.41	0.53
90881	.	0.00	.	14.27	31.50	0.19	0.22
90881	.	4.50	.	12.00	32.43	0.57	0.31
90881	9.10	8.10	2.10	9.98	32.82	14.03	1.54
160881	.	0.00	.	13.60	31.02	0.19	0.35
160881	.	4.50	.	11.60	30.98	1.31	0.48
160881	9.00	8.00	6.00	10.94	31.35	4.04	0.61
70981	.	0.00	.	13.38	29.02	0.40	0.30
70981	.	4.50	.	10.80	31.04	12.66	1.21
70981	8.76	7.70	2.10	10.70	31.32	7.71	0.95
140981	.	0.00	.	11.50	31.44	4.51	0.72
140981	.	4.50	.	10.96	31.47	13.84	1.47
140981	9.30	8.30	3.70	10.72	31.79	13.84	1.48
200981	.	0.00	.	9.62	32.21	12.66	1.34
200981	.	4.00	.	9.56	32.39	17.09	1.53
200981	8.50	7.50	5.00	9.40	32.82	18.90	1.75

ENVIRONMENTAL MONITORING DATA FOR STATION C

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
140580	.	0.00	.	.	.	1.64	0.58
140580	.	1.00	.	.	.	1.32	0.53
140580	.	2.00	.	.	.	3.48	0.74
140580	.	4.00	.	.	.	3.48	0.71
140580	8.20	7.20	6.20	.	.	8.16	1.12
210580	.	0.00	.	.	.	2.97	0.71
210580	.	1.00	.	.	.	3.80	0.89
210580	.	2.00	.	.	.	3.41	0.68
210580	.	4.00	.	.	.	6.77	0.94
210580	6.40	5.40	6.40	.	.	6.71	0.99
280580	.	0.00	.	.	.	0.21	0.37
280580	.	1.00	.	.	.	0.00	0.38
280580	.	2.00	.	.	.	0.00	0.36
280580	.	4.00	.	.	.	0.00	0.52
280580	8.40	7.40	3.00	.	.	1.45	0.62
40680	.	0.00	.	.	.	0.20	0.43
40680	.	1.00	.	.	.	0.26	0.42
40680	.	2.00	.	.	.	2.81	0.46
40680	.	4.00	.	.	.	5.62	0.72
40680	5.55	4.55	4.80	.	.	3.11	0.73
110680	.	0.00	.	.	.	0.74	0.35
110680	.	1.00	.	.	.	0.21	0.33
110680	.	2.00	.	.	.	0.21	0.39
110680	.	4.00	.	.	.	0.21	0.43
110680	7.80	6.80	3.00	.	.	0.48	0.73
180680	.	0.00	.	.	.	0.76	0.38
180680	.	1.00	.	.	.	0.05	0.50
180680	.	2.00	.	.	.	0.22	0.48
180680	.	4.00	.	.	.	2.17	0.61
180680	5.60	4.60	3.50	.	.	3.20	0.62
250680	.	0.00	.	.	.	0.14	0.22
250680	.	1.00	.	.	.	0.09	0.25
250680	.	2.00	.	.	.	0.11	0.25
250680	.	4.00	.	.	.	1.32	0.41
250680	8.30	7.30	3.10	.	.	6.66	0.85
90780	.	0.00	.	13.83	27.73	0.61	0.49
90780	.	1.00	.	12.21	27.93	2.34	0.59
90780	.	2.00	.	11.99	27.97	3.81	0.74
90780	.	4.00	.	11.33	28.17	3.17	0.74
90780	7.00	6.00	4.50	10.91	28.92	4.29	0.90
160780	.	0.00	.	13.26	29.39	1.39	0.53
160780	.	1.00	.	11.63	30.93	2.79	0.66
160780	.	2.00	.	11.20	31.51	5.15	0.89
160780	.	4.00	.	10.02	32.01	5.79	1.00
160780	5.50	4.50	2.80	9.71	31.91	4.20	0.95
230780	.	0.00	.	14.89	28.42	0.23	0.19
230780	.	1.00	.	13.67	29.06	0.23	0.15
230780	.	2.00	.	12.96	30.04	0.00	0.15
230780	.	4.00	.	11.82	31.00	2.79	0.49
230780	7.60	6.60	1.70	10.25	31.39	10.90	1.28

ENVIRONMENTAL MONITORING DATA FOR STATION C

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
10880	.	0.00	.	14.10	30.60	0.04	0.42
10880	.	1.00	.	12.50	31.00	0.04	0.39
10880	.	2.00	.	11.60	31.20	0.11	0.33
10880	.	4.00	.	10.50	31.50	7.20	0.95
10880	5.00	5.00	4.25	10.30	31.90	.	.
60880	.	0.00	.	14.75	31.52	0.12	0.13
60880	.	1.00	.	14.68	31.42	0.10	0.19
60880	.	2.00	.	13.35	31.45	0.05	0.22
60880	.	4.00	.	11.68	31.31	0.12	0.25
60880	6.50	5.50	2.00	11.08	31.27	0.71	0.41
140880	.	0.00	.	12.59	31.32	0.19	0.50
140880	.	1.00	.	12.05	31.41	0.16	0.28
140880	.	2.00	.	11.41	31.48	0.84	0.84
140880	.	4.00	.	10.94	31.42	4.34	1.25
140880	7.10	6.10	2.80	10.40	31.51	9.17	1.54
210880	.	0.00	.	12.09	31.34	0.83	0.45
210880	.	1.00	.	12.12	31.37	1.19	0.56
210880	.	2.00	.	11.64	31.57	0.68	0.42
210880	.	4.00	.	11.23	31.52	2.66	0.64
210880	7.20	6.20	4.40	10.54	31.61	3.37	0.64
260880	.	0.00	.	11.88	31.07	0.40	0.43
260880	.	1.00	.	11.21	31.27	0.12	0.40
260880	.	2.00	.	10.70	31.35	2.79	0.69
260880	.	4.00	.	9.93	31.61	11.97	1.26
260880	8.60	7.60	4.30	9.76	31.68	9.38	1.17
30980	.	0.00	.	10.05	31.75	9.91	1.18
30980	.	1.00	.	10.00	31.85	6.90	0.86
30980	.	2.00	.	9.55	32.45	12.59	1.49
30980	.	4.00	.	9.10	32.75	14.01	1.81
30980	6.90	5.90	3.40	9.00	32.70	17.05	2.08
100980	.	0.00	.	12.24	30.28	4.03	0.78
100980	.	1.00	.	11.59	30.32	7.14	0.97
100980	.	2.00	.	10.84	30.54	7.03	1.11
100980	.	4.00	.	10.05	31.39	8.58	1.35
100980	6.00	5.00	6.00	10.25	31.39	15.61	1.77
170980	.	0.00	.	12.66	30.94	6.48	1.04
170980	.	1.00	.	12.54	30.87	6.48	1.07
170980	.	2.00	.	12.23	30.90	7.59	1.08
170980	.	4.00	.	10.89	31.53	13.40	1.72
170980	7.00	6.00	6.50	10.45	30.93	5.63	1.20
230980	.	0.00	.	10.58	30.60	12.51	1.33
230980	.	1.00	.	10.52	31.04	9.77	1.11
230980	.	2.00	.	10.06	31.69	15.47	1.55
230980	.	4.00	.	9.51	32.07	16.72	1.63
230980	8.80	7.80	8.80	9.25	32.27	16.84	1.62
201080	.	0.00	.	9.57	31.53	11.39	1.35
201080	.	1.00	.	9.57	31.81	12.24	1.28
201080	.	2.00	.	9.68	32.02	17.33	1.55
201080	.	4.00	.	9.42	32.32	15.50	1.64
201080	9.70	8.70	9.70	8.98	32.61	15.50	1.43
41280	.	0.00	.	6.70	30.90	23.04	2.13
41280	.	1.00	.	7.20	31.00	20.94	1.95
41280	.	2.00	.	7.20	31.30	23.09	2.13
41280	.	4.00	.	7.40	31.30	18.93	1.77
41280	9.00	8.00	7.50	7.40	31.20	22.69	2.15

ENVIRONMENTAL MONITORING DATA FOR STATION C

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
50381	.	0.00	.	7.20	30.97	18.60	1.72
50381	.	1.00	.	7.20	30.97	10.19	1.29
50381	.	2.00	.	7.22	31.00	18.26	1.70
50381	.	4.00	.	7.34	31.08	18.97	1.76
50381	8.30	7.30	8.30	7.36	31.08	19.77	1.77
260381	.	0.00	.	8.30	31.40	6.78	1.12
260381	.	1.00	.	8.20	31.35	0.62	1.17
260381	.	2.00	.	8.18	31.44	7.77	1.03
260381	.	4.00	.	8.09	31.52	3.75	0.77
260381	5.80	4.80	5.80	8.09	31.66	.	.
150581	.	0.00	.	10.99	28.42	4.02	0.82
150581	.	1.00	.	10.06	28.46	3.35	0.69
150581	.	2.00	.	10.16	28.55	3.35	0.66
150581	6.80	5.80	4.80	9.15	29.14	7.14	0.92
240581	.	0.00	.	9.64	31.82	3.02	0.77
240581	.	1.00	.	9.55	31.80	5.03	0.86
240581	.	2.00	.	9.12	31.94	5.36	0.86
240581	.	4.00	.	8.57	32.08	6.70	1.03
240581	5.70	4.70	5.70	8.55	32.09	10.25	1.25
290581	.	0.00	.	13.90	30.75	0.07	0.40
290581	.	1.00	.	12.83	31.07	0.07	0.60
290581	.	2.00	.	12.03	31.29	0.10	0.47
290581	.	4.00	.	11.47	31.46	0.10	0.60
290581	6.00	5.00	2.50	10.15	31.57	1.01	0.77
60681	.	0.00	.	9.06	32.36	3.66	1.35
60681	.	1.00	.	9.04	32.24	12.20	1.48
60681	.	2.00	.	9.02	32.50	7.00	0.93
60681	5.00	4.00	5.00	8.94	32.70	12.12	1.37
120681	.	0.00	.	11.55	30.10	4.39	0.65
120681	.	1.00	.	10.28	31.60	3.46	0.64
120681	.	2.00	.	10.12	31.79	6.16	0.86
120681	8.00	7.00	8.00	9.36	32.06	6.70	0.89
190681	.	0.00	.	9.87	28.60	6.16	1.00
190681	.	1.00	.	9.60	28.72	5.23	0.83
190681	.	2.00	.	9.40	28.88	2.31	0.57
190681	5.20	4.20	2.00	8.92	29.18	6.16	1.13
50781	.	0.00	.	12.33	31.36	0.96	0.26
50781	.	1.00	.	12.33	31.34	0.58	0.26
50781	.	2.00	.	12.00	31.28	1.54	0.48
50781	6.90	5.90	4.30	10.90	31.50	2.69	0.52
120781	.	0.00	.	14.06	29.80	1.35	0.39
120781	.	1.00	.	13.41	29.97	3.35	0.54
120781	.	2.00	.	12.68	29.87	4.96	0.65
120781	7.80	6.80	6.00	11.39	29.90	3.54	1.03
190781	.	0.00	.	14.91	29.98	0.08	0.26
190781	.	1.00	.	14.84	30.04	0.46	0.18
190781	.	2.00	.	12.96	30.03	0.19	0.22
190781	7.00	6.00	.	.	.	1.14	0.26
90881	.	0.00	.	15.11	31.82	0.19	0.26
90881	.	1.00	.	15.48	32.08	0.57	0.18
90881	.	2.00	.	14.03	31.89	0.19	0.18
90881	7.50	6.50	2.00	11.20	32.45	1.44	0.53
160881	.	0.00	.	13.55	30.71	0.19	0.30
160881	.	1.00	.	13.31	30.94	0.15	0.26
160881	.	2.00	.	12.86	30.67	0.12	0.22
160881	7.00	6.00	5.00	11.66	31.07	0.77	0.30

ENVIRONMENTAL MONITORING DATA FOR STATION C

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
70981	.	0.00	.	12.61	29.88	.	.
70981	.	1.00	.	12.00	30.18	0.40	0.30
70981	.	2.00	.	11.70	30.34	0.79	0.48
70981	7.25	6.25	2.00	10.42	31.57	8.11	0.87
140981	.	0.00	.	12.08	30.88	2.65	0.63
140981	.	1.00	.	11.80	31.00	1.82	0.52
140981	.	2.00	.	11.22	31.32	7.47	0.95
140981	7.50	6.50	2.50	10.82	31.78	7.40	1.17
200981	.	0.00	.	9.86	32.31	11.98	1.17
200981	.	1.00	.	9.88	32.10	11.07	1.13
200981	.	2.00	.	9.72	32.18	11.39	1.13
200981	6.70	5.70	3.50	9.50	32.42	15.62	1.53

ENVIRONMENTAL MONITORING DATA FOR STATION D

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
140580	.	0.00	.	.	.	1.37	0.60
140580	.	1.50	.	.	.	1.06	0.63
140580	3.00	2.00	.	.	.	1.37	0.59
210580	1.40	0.00	1.40	.	.	1.38	1.05
280580	.	0.00	.	.	.	0.52	0.30
280580	.	1.50	.	.	.	0.00	0.52
280580	3.30	2.30	3.30	.	.	0.00	0.50
40680	.	0.00	.	.	.	0.05	0.96
40680	1.00	0.50	1.00	.	.	0.46	0.76
110680	.	0.00	.	.	.	0.74	0.27
110680	.	1.50	.	.	.	0.27	0.55
110680	3.00	2.00	3.00	.	.	0.27	0.64
180680	.	0.00	.	.	.	0.33	0.99
250680	.	0.00	.	.	.	0.28	0.55
250680	3.00	2.00	3.00	.	.	0.06	0.44
90780	.	0.00	.	13.99	27.67	0.39	0.63
90780	.	1.00	.	12.88	27.63	1.10	0.68
90780	2.00	2.00	2.00	12.76	27.91	.	.
160780	.	0.00	.	13.35	29.43	1.01	0.56
230780	.	0.00	.	16.02	28.15	0.09	0.38
230780	.	1.00	.	14.48	29.70	0.09	0.34
230780	2.40	1.40	1.80	13.74	30.38	0.33	0.33
10880	.	0.00	.	14.00	30.50	0.09	0.40
10880	.	2.50	.	11.60	31.20	0.44	0.55
10880	4.50	3.50	4.50	10.60	31.70	5.46	0.92
60880	.	0.00	.	16.05	31.40	0.24	0.35
60880	1.20	0.20	1.20	15.92	31.25	0.00	0.36
140880	.	0.00	.	13.72	31.32	0.47	1.46
140880	.	0.75	.	12.80	31.49	0.23	0.79
140880	1.50	1.50	1.50	12.30	31.62	.	.
210880	.	0.00	.	13.20	31.60	0.32	0.72
210880	.	1.00	.	13.04	31.74	.	.
210880	2.10	1.10	2.10	12.56	31.68	0.32	0.83
260880	.	0.00	.	11.86	31.08	0.80	0.39
260880	.	1.50	.	11.83	31.20	0.16	0.42
260880	3.50	2.50	3.50	11.75	31.32	0.20	0.81
30980	.	0.00	.	10.35	31.70	5.77	1.06
30980	.	1.00	.	10.40	31.60	7.59	1.45
30980	2.30	1.30	2.30	10.25	31.65	7.31	1.48
100980	1.40	0.00	1.40	12.90	29.24	8.70	1.04
170980	.	0.00	.	12.67	30.76	6.25	1.44
170980	1.80	0.80	1.80	12.65	30.78	12.95	1.52
230980	.	0.00	.	11.17	30.85	9.14	1.28
230980	.	1.50	.	10.38	31.81	9.14	1.38
230980	3.30	2.30	3.30	9.94	32.12	16.50	1.83
201080	.	0.00	.	9.31	31.63	10.50	1.22
201080	.	1.80	.	9.50	32.15	13.36	1.39
201080	3.60	2.60	3.60	9.26	32.32	8.98	0.96
41280	.	0.00	.	6.40	31.40	14.77	1.55
41280	.	1.00	.	6.60	31.90	22.85	2.13
41280	4.50	3.50	3.50	6.40	32.10	22.69	2.13
50381	.	0.00	.	7.22	30.90	12.63	1.38
50381	.	1.00	.	7.20	30.84	.	.
50381	2.30	1.30	2.30	7.27	30.90	14.74	1.58
260381	.	0.00	.	8.49	31.55	4.52	0.95
260381	1.50	0.50	1.50	8.52	31.54	6.20	0.95

ENVIRONMENTAL MONITORING DATA FOR STATION D

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DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
150581	.	0.00	.	10.29	28.61	5.09	0.99
150581	.	2.40	.	9.97	28.65	2.01	0.71
150581	4.80	3.80	4.00	9.57	28.79	2.81	0.65
240581	.	0.00	.	10.10	31.80	6.03	1.21
240581	1.90	0.90	1.90	9.87	31.92	8.38	1.46
290581	.	0.00	.	14.56	30.63	0.17	0.39
290581	.	1.00	.	13.61	31.69	.	.
290581	2.30	1.30	2.30	11.95	31.48	0.17	0.52
60681	.	0.00	.	9.23	32.00	3.27	1.52
60681	2.00	1.00	2.00	9.31	32.00	4.31	1.00
120681	.	0.00	.	11.60	30.70	4.16	0.74
120681	.	2.00	.	10.62	31.70	5.39	0.95
120681	4.00	3.00	4.00	10.22	31.82	8.47	1.32
190681	.	0.00	.	10.24	30.04	4.43	1.17
190681	1.60	0.60	1.40	9.75	31.05	4.12	1.00
50781	.	0.00	.	12.65	31.36	0.58	0.39
50781	3.00	2.00	3.00	11.40	31.47	0.38	0.61
120781	.	0.00	.	14.57	30.89	0.42	0.44
120781	3.50	2.50	3.50	12.89	30.95	3.35	0.52
190781	.	0.00	.	15.60	29.95	0.19	0.22
190781	1.50	0.50	1.50	14.92	29.80	0.11	0.31
90881	.	0.00	.	15.91	31.61	0.27	0.26
90881	3.30	2.30	2.00	13.53	32.31	0.19	0.53
160881	.	0.00	.	14.02	30.67	0.23	0.48
160881	2.50	1.50	2.50	13.52	30.31	0.19	0.44
70981	.	0.00	.	12.88	30.88	0.08	0.35
70981	.	1.50	.	12.54	31.42	0.24	0.43
70981	3.00	2.00	2.00	11.91	31.44	0.63	0.30
140981	.	0.00	.	13.20	30.62	0.24	0.61
140981	.	1.50	.	11.63	31.10	0.99	0.48
140981	3.00	2.00	3.00	11.18	31.54	6.33	0.95
200981	.	0.00	.	10.35	32.08	5.81	1.00
200981	.	1.00	.	10.20	31.86	5.34	1.01
200981	3.50	2.50	2.60	10.29	31.90	5.54	1.03

ENVIRONMENTAL MONITORING DATA FOR STATION E

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
140580	.	0.00	.	.	.	2.90	0.58
140580	.	9.00	.	.	.	13.46	1.32
140580	18.50	17.50	13.40	.	.	8.44	1.08
210580	.	0.00	.	.	.	10.07	1.12
210580	.	7.30	.	.	.	10.51	1.14
210580	14.50	13.50	11.00	.	.	13.48	1.44
280580	.	0.00	.	.	.	0.21	0.35
280580	.	10.00	.	.	.	7.79	1.11
280580	19.50	18.50	3.50	.	.	1.01	1.22
40680	.	0.00	.	.	.	7.40	0.93
40680	.	10.00	.	.	.	6.89	1.02
40680	20.18	19.18	7.50	.	.	8.73	1.14
110680	.	0.00	.	.	.	0.21	0.26
110680	.	10.50	.	.	.	7.96	1.29
110680	21.00	20.00	3.50	.	.	15.91	1.73
180680	.	0.00	.	.	.	0.22	0.39
180680	.	11.00	.	.	.	4.55	0.81
180680	21.90	20.90	4.00	.	.	11.33	1.10
250680	.	0.00	.	.	.	0.14	0.22
250680	.	11.00	.	.	.	7.03	0.93
250680	21.60	20.60	4.00	.	.	14.70	1.40
90780	.	0.00	.	12.75	28.10	3.59	0.71
90780	.	10.00	.	9.23	28.87	6.25	1.07
90780	21.65	20.65	5.00	.	.	10.27	1.22
160780	.	0.00	.	11.51	30.93	6.76	0.92
160780	.	6.00	.	9.44	31.80	9.59	1.17
160780	15.50	14.50	3.50	.	.	6.82	1.13
230780	.	0.00	.	13.69	28.67	0.09	0.15
230780	.	6.00	.	9.42	31.71	13.80	1.40
230780	15.70	14.70	1.80	.	.	19.60	1.83
10880	.	0.00	.	11.10	31.50	2.56	0.44
10880	.	10.00	.	9.80	32.00	7.33	0.84
10880	21.00	20.00	8.00	.	.	10.40	1.24
60880	.	0.00	.	13.10	31.53	7.97	0.87
60880	.	7.00	.	11.12	31.42	5.24	0.66
60880	14.00	13.00	.	10.62	31.54	9.40	1.10
140880	.	0.00	.	11.42	30.48	0.59	0.40
140880	.	7.00	.	9.85	31.90	7.08	0.79
140880	14.50	13.50	4.20	9.25	32.25	7.64	0.98
210880	.	0.00	.	11.67	31.76	2.66	0.51
210880	.	8.50	.	10.10	31.45	6.96	0.96
210880	17.00	16.00	5.40	.	.	10.62	1.33
260880	.	0.00	.	10.53	31.54	3.99	0.76
260880	.	10.00	.	8.71	32.40	17.76	1.78
260880	20.60	19.60	8.80	.	.	16.36	1.72
30980	.	0.00	.	8.95	32.90	12.99	1.35
30980	.	10.00	.	8.45	33.05	14.41	1.41
30980	19.00	18.00	.	.	.	21.26	2.10
100980	.	0.00	.	11.09	30.64	13.65	1.48
100980	.	8.00	.	9.25	32.22	7.22	1.28
100980	16.20	15.20	10.90	.	.	15.54	1.59
170980	.	0.00	.	11.26	31.41	15.68	1.72
170980	.	8.50	.	10.54	31.58	12.82	1.60
170980	17.30	16.30	7.20	.	.	8.49	1.15
230980	.	0.00	.	9.40	32.14	14.13	1.27
230980	.	9.00	.	8.79	32.43	25.23	2.16
230980	18.40	17.40	13.50	.	.	25.16	2.14

ENVIRONMENTAL MONITORING DATA FOR STATION E

DATE	BUTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
201080	.	0.00	.	8.86	32.44	16.30	1.54
201080	.	10.00	.	8.79	32.57	18.85	1.99
201080	19.30	18.30	9.50	.	.	12.11	1.48
31280	.	0.00	.	7.15	28.91	16.00	1.62
31280	.	9.00	.	6.14	31.18	18.26	1.76
31280	19.00	18.00	9.50	8.14	29.35	23.31	2.12
50381	.	0.00	.	7.26	31.24	20.34	1.65
50381	.	11.00	.	7.44	31.38	13.00	1.36
50381	22.50	21.50	9.00	.	.	19.40	1.76
260381	.	0.00	.	8.04	31.50	8.55	1.02
260381	.	9.00	.	8.06	31.53	3.18	0.65
260381	17.30	16.30	.	.	.	9.92	1.06
60681	.	0.00	.	9.26	32.60	11.54	1.79
60681	.	10.00	.	8.82	32.75	10.97	1.46
60681	20.00	19.00	12.50	8.90	32.61	8.47	1.22

ENVIRONMENTAL MONITORING DATA FOR STATION F

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
140580	.	0.00	.	.	.	3.85	0.79
140580	.	4.00	.	.	.	5.81	0.91
140580	7.70	6.70	7.70	.	.	5.17	0.86
210580	.	0.00	.	.	.	8.03	0.97
210580	.	2.70	.	.	.	6.05	0.84
210580	5.40	4.40	5.40	.	.	5.94	0.87
280580	.	0.00	.	.	.	0.36	0.42
280580	.	4.00	.	.	.	3.63	0.83
280580	8.40	7.40	3.50	.	.	3.89	0.67
40680	.	0.00	.	.	.	1.33	0.69
40680	.	2.50	.	.	.	.	0.72
40680	5.17	4.17	5.17	.	.	4.70	0.94
110680	.	0.00	.	.	.	0.27	1.09
110680	.	4.50	.	.	.	0.27	0.59
110680	8.70	7.70	3.15	.	.	6.58	1.07
180680	.	0.00	.	.	.	1.52	0.43
180680	.	3.00	.	.	.	1.41	0.59
180680	5.60	4.60	5.60	.	.	3.25	0.72
250680	.	0.00	.	.	.	2.07	0.44
250680	.	4.00	.	.	.	4.16	0.63
250680	8.40	7.40	4.30	.	.	11.70	1.11
90780	.	0.00	.	12.93	28.27	1.56	0.64
90780	.	4.00	.	11.24	28.28	1.85	0.70
90780	7.80	6.80	3.60	9.52	29.02	5.98	0.88
160780	.	0.00	.	11.12	31.42	3.75	0.81
160780	.	2.50	.	10.71	31.52	8.26	1.13
160780	5.50	4.50	3.00	10.47	31.66	6.71	0.95
230780	.	0.00	.	13.87	28.80	0.12	0.14
230780	.	4.00	.	10.06	31.37	4.55	0.72
230780	7.80	6.80	1.70	10.00	31.35	11.50	1.22
10880	.	0.00	.	11.50	30.80	1.77	0.51
10880	.	3.50	.	10.50	31.70	4.97	0.69
10880	7.00	6.00	.	10.30	31.80	5.63	0.77
60880	.	0.00	.	13.36	31.87	0.57	0.37
60880	.	3.00	.	12.45	31.69	0.29	0.33
60880	6.50	5.50	2.30	10.08	31.84	1.55	0.44
140880	.	0.00	.	11.90	31.31	0.61	0.36
140880	.	3.70	.	11.13	31.54	1.10	0.45
140880	7.40	6.40	3.00	10.05	31.84	10.30	1.11
210880	.	0.00	.	12.92	31.56	3.06	0.69
210880	.	3.00	.	10.41	31.44	4.25	0.70
210880	6.70	5.70	4.50	10.23	31.46	4.53	0.78
260880	.	0.00	.	11.10	31.13	3.99	1.10
260880	.	3.50	.	9.28	32.03	15.76	1.65
260880	7.50	6.50	7.50	9.15	32.20	18.95	1.93
30980	.	0.00	.	9.25	32.45	9.26	1.05
30980	.	3.90	.	8.75	32.90	10.76	1.23
30980	7.80	6.80	7.00	8.60	32.90	19.69	1.93
100980	.	0.00	.	9.77	31.76	4.81	0.82
100980	.	3.50	.	9.63	32.20	15.91	1.61
100980	6.80	5.80	6.80	9.55	32.25	7.40	1.20
170980	.	0.00	.	11.74	31.32	13.62	1.67
170980	.	4.00	.	11.07	31.46	15.01	1.75
170980	7.60	6.60	7.60	10.64	31.57	9.60	1.35

ENVIRONMENTAL MONITORING DATA FOR STATION F

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
230980	.	0.00	.	9.48	32.21	10.18	1.34
230980	.	4.00	.	9.15	32.59	22.53	1.97
230980	7.90	6.90	7.90	9.09	32.53	19.06	1.84
201080	.	0.00	.	8.92	32.41	22.25	2.08
201080	.	4.00	.	8.88	32.57	16.75	1.56
201080	8.10	7.10	8.10	8.84	32.61	13.22	1.44
31280	.	0.00	.	7.14	29.00	22.82	2.10
31280	.	3.50	.	8.02	29.56	14.66	1.59
31280	8.70	7.70	7.70	7.90	29.62	22.02	2.06
50381	.	0.00	.	7.18	31.14	10.66	1.21
50381	.	4.00	.	7.28	31.06	14.24	1.42
50381	8.20	7.20	8.20	7.22	31.08	7.20	0.99
260381	.	0.00	.	8.29	31.63	12.43	1.35
260381	.	3.00	.	8.24	31.81	10.46	1.16
260381	6.20	5.20	6.20	8.15	31.84	10.05	1.33
60681	.	0.00	.	9.34	32.40	9.24	1.26
60681	.	3.00	.	9.20	32.57	8.85	1.04
60681	5.80	4.80	5.90	9.11	32.55	10.66	1.22

ENVIRONMENTAL MONITORING DATA FOR STATION G

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
140580	.	0.00	.	.	.	2.59	0.68
140580	.	1.00	.	.	.	3.48	0.78
140580	.	2.00	.	.	.	2.90	0.66
140580	.	4.00	.	.	.	7.13	1.04
140580	5.40	4.40	5.40	.	.	7.29	1.05
210580	.	0.00	.	.	.	3.69	0.83
210580	.	1.00	.	.	.	3.91	0.85
210580	.	2.00	.	.	.	4.24	1.03
210580	3.70	2.70	3.70	.	.	3.63	0.77
280580	.	0.00	.	.	.	0.52	0.48
280580	.	1.00	.	.	.	0.31	0.53
280580	.	2.00	.	.	.	0.52	0.48
280580	.	4.00	.	.	.	2.44	0.67
280580	5.80	4.80	3.50	.	.	3.32	0.63
40680	.	0.00	.	.	.	1.79	1.06
40680	.	1.00	.	.	.	6.33	1.08
40680	2.63	2.00	2.63	.	.	3.83	1.12
110680	.	0.00	.	.	.	0.27	0.55
110680	.	1.00	.	.	.	0.27	0.60
110680	.	2.00	.	.	.	0.27	0.72
110680	.	4.00	.	.	.	0.27	0.50
110680	5.70	4.70	3.30	.	.	0.58	0.53
180680	.	0.00	.	.	.	0.54	0.62
180680	.	1.00	.	.	.	0.87	0.58
180680	.	2.00	.	.	.	0.54	0.59
180680	3.10	2.10	3.10	.	.	1.03	0.42
250680	.	0.00	.	.	.	0.57	0.37
250680	.	1.00	.	.	.	0.72	0.37
250680	.	2.00	.	.	.	1.44	0.49
250680	.	4.00	.	.	.	2.44	0.66
250680	5.80	4.80	4.20	.	.	5.34	0.81
90780	.	0.00	.	13.19	28.19	2.85	0.74
90780	.	1.00	.	12.73	28.26	1.83	0.72
90780	.	2.00	.	12.66	28.31	1.81	0.74
90780	.	4.00	.	12.53	28.21	1.59	0.68
90780	5.32	5.32	3.80	12.45	28.28	.	.
160780	.	0.00	.	11.34	31.30	6.44	1.00
160780	.	1.00	.	11.22	31.36	4.59	0.89
160780	.	2.00	.	11.14	31.63	6.26	1.10
160780	3.40	2.40	3.00	10.89	31.72	4.40	0.86
230780	.	0.00	.	14.82	28.92	0.23	0.32
230780	.	1.00	.	14.20	29.00	0.14	0.29
230780	.	2.00	.	13.79	29.32	0.12	0.18
230780	.	4.00	.	11.00	31.03	4.44	0.70
230780	5.00	5.00	1.70	10.70	31.24	.	.
10880	.	0.00	.	12.40	29.60	0.33	0.50
10880	.	1.00	.	12.10	31.20	0.44	0.45
10880	.	2.00	.	11.50	31.40	.	.
10880	3.50	2.50	3.50	11.10	31.50	2.56	0.62
60880	.	0.00	.	13.74	31.25	0.18	0.44
60880	.	1.00	.	13.48	31.26	0.14	0.36
60880	.	2.00	.	13.23	31.26	0.45	0.32
60880	4.00	4.00	3.00	11.96	30.80	.	.
140880	.	0.00	.	12.60	31.47	0.52	0.67
140880	.	1.00	.	12.34	31.59	0.80	0.63
140880	.	2.00	.	11.70	31.52	0.68	0.39
140880	.	4.00	.	11.16	31.64	5.65	0.73
140880	6.00	5.00	3.00	10.90	31.70	2.72	0.67

ENVIRONMENTAL MONITORING DATA FOR STATION G

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
210880	.	0.00	.	13.00	31.39	1.91	0.80
210880	.	1.00	.	12.41	31.51	2.27	0.66
210880	.	2.00	.	11.53	31.63	2.15	0.85
210880	4.30	3.30	4.30	10.70	31.60	4.85	0.99
260880	.	0.00	.	11.17	31.39	1.80	0.77
260880	.	1.00	.	10.72	31.44	2.99	0.97
260880	.	2.00	.	9.87	31.63	6.58	1.13
260880	.	4.00	.	9.81	31.81	.	.
260880	5.30	4.30	5.30	9.76	31.84	4.99	1.07
30980	.	0.00	.	10.10	32.30	7.31	1.01
30980	.	1.00	.	10.10	32.35	7.06	0.98
30980	.	2.00	.	9.50	32.75	12.99	1.45
30980	.	4.00	.	8.60	32.90	18.27	1.85
30980	4.80	4.80	4.80	8.80	31.85	.	.
100980	.	0.00	.	11.53	30.28	5.92	0.89
100980	.	1.00	.	10.44	31.25	9.99	1.14
100980	.	2.00	.	9.81	32.01	7.40	1.30
100980	4.20	3.20	4.20	9.71	31.94	8.29	1.26
170980	.	0.00	.	12.12	31.25	7.15	1.03
170980	.	1.00	.	12.10	31.24	8.71	1.21
170980	.	2.00	.	11.99	31.30	5.45	0.76
170980	4.40	3.40	4.40	11.39	31.37	14.74	1.39
230980	.	0.00	.	9.75	32.02	17.35	1.83
230980	.	1.00	.	9.35	32.20	19.34	1.84
230980	.	2.00	.	9.40	32.37	12.47	1.38
230980	.	4.00	.	9.30	32.35	.	.
230980	5.20	4.20	5.20	9.36	32.37	19.65	1.90
201080	.	0.00	.	9.08	32.33	13.40	1.47
201080	.	1.00	.	9.08	32.39	11.75	1.44
201080	.	2.00	.	8.90	32.53	18.54	1.83
201080	.	4.00	.	9.00	32.50	18.31	1.80
201080	6.10	5.10	6.10	8.99	32.62	11.17	1.55
31280	.	0.00	.	7.12	28.76	22.96	2.13
31280	.	1.00	.	7.10	28.72	21.21	1.96
31280	.	2.00	.	8.06	29.38	22.98	2.14
31280	5.50	4.50	4.50	8.05	29.40	17.59	1.75
50381	.	0.00	.	7.14	31.14	11.56	1.38
50381	.	1.00	.	7.10	31.16	14.91	1.51
50381	.	2.00	.	7.16	31.06	16.42	1.68
50381	.	4.00	.	7.14	31.10	14.07	1.51
50381	7.80	6.80	7.80	7.20	31.20	16.76	1.72
260381	.	0.00	.	8.30	31.78	6.13	0.90
260381	.	1.00	.	8.31	31.53	5.09	0.86
260381	3.00	2.00	3.00	8.32	31.66	10.89	1.42
60681	.	0.00	.	9.57	32.25	5.16	0.94
60681	.	1.00	.	9.42	32.38	3.66	0.96
60681	2.60	1.60	2.60	9.25	32.00	5.58	1.08

ENVIRONMENTAL MONITORING DATA FOR STATION H

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
140580	.	0.00	.	.	.	0.58	0.69
140580	2.40	1.40	2.40	.	.	4.49	1.16
210580	.	0.00	.	.	.	1.38	0.76
280580	.	0.00	.	.	.	0.31	0.48
280580	.	1.70	.	.	.	0.42	0.74
280580	3.40	2.40	3.40	.	.	0.83	0.78
40680	.	0.00	.	.	.	1.02	1.41
40680	1.00	0.50	1.00	.	.	0.82	1.66
110680	.	0.00	.	.	.	0.37	0.66
110680	.	2.00	.	.	.	0.37	0.68
110680	3.70	2.70	3.50	.	.	0.32	0.55
180680	.	0.00	.	.	.	0.27	0.76
250680	3.30	0.00	3.30	.	.	0.69	0.96
90780	.	0.00	.	12.61	28.26	3.22	0.99
90780	.	1.15	.	12.67	28.19	1.81	0.64
90780	2.30	1.30	2.30	12.51	28.20	1.98	0.77
160780	.	0.00	.	11.31	31.33	1.80	0.70
230780	.	0.00	.	14.20	28.22	0.23	0.15
230780	.	1.50	.	13.88	29.28	0.23	0.19
230780	2.90	1.90	1.70	13.32	29.65	0.09	0.23
60880	.	0.00	.	13.88	31.44	0.55	0.36
60880	.	1.00	.	12.80	31.56	0.26	0.46
60880	2.10	2.10	2.10	12.31	31.37	.	.
140880	.	0.00	.	12.83	31.60	0.33	0.49
140880	.	2.00	.	11.49	31.50	1.29	0.63
140880	3.90	2.90	3.30	11.42	31.75	1.15	0.56
210880	.	0.00	.	13.09	31.69	0.32	0.56
210880	1.50	0.50	1.50	12.75	31.70	0.32	0.74
260880	.	0.00	.	11.13	31.42	3.59	1.06
260880	.	1.50	.	10.53	31.48	5.19	1.17
260880	2.20	2.20	2.20	10.09	31.55	.	.
30980	.	0.00	.	10.10	32.50	9.70	1.41
30980	.	1.00	.	10.10	32.55	8.44	1.03
30980	2.30	1.30	2.30	10.10	32.40	10.56	1.49
100980	.	0.00	.	11.24	30.40	6.48	1.01
100980	1.70	1.70	1.70	10.44	31.24	.	.
230980	.	0.00	.	9.81	32.15	10.36	1.35
230980	.	1.50	.	9.57	32.24	14.65	1.59
230980	3.40	2.40	3.40	9.55	32.25	18.39	1.97
201080	.	0.00	.	9.21	32.34	7.59	1.40
201080	.	2.00	.	9.10	32.54	9.16	1.24
201080	4.00	3.00	4.00	9.05	32.50	15.28	1.60
31280	.	0.00	.	7.10	28.80	23.41	2.17
31280	3.00	2.00	2.00	7.00	28.83	15.04	1.58
50381	.	0.00	.	6.58	30.91	9.22	1.29
50381	.	1.50	.	6.68	30.98	12.30	1.46
50381	3.50	2.50	3.50	6.62	31.04	12.20	1.42

ENVIRONMENTAL MONITORING DATA FOR STATION I

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
280580	.	0.00	.	.	.	1.56	0.64
280580	7.70	6.70	3.70	.	.	2.08	0.59
40680	.	0.00	.	.	.	6.69	1.06
40680	4.77	3.77	4.77	.	.	8.27	1.04
110680	.	0.00	.	.	.	0.27	0.49
110680	8.20	7.20	3.20	.	.	5.57	0.94
180680	.	0.00	.	.	.	0.43	0.69
180680	5.50	4.50	5.50	.	.	10.03	1.07
250680	.	0.00	.	.	.	3.85	0.60
250680	7.60	6.60	5.50	.	.	11.90	0.15
90780	.	0.00	.	11.51	28.05	4.15	0.80
90780	6.55	5.55	4.50	10.55	28.55	3.81	0.82
160780	.	0.00	.	10.36	31.55	8.15	1.11
160780	5.70	4.70	5.00	9.52	31.88	9.95	1.19
230780	.	0.00	.	12.96	28.68	0.23	0.17
230780	6.90	5.90	1.60	10.55	31.50	6.73	0.93
10880	.	0.00	.	11.20	31.50	2.21	0.47
10880	6.00	5.00	6.00	10.50	31.70	5.90	0.73
60880	.	0.00	.	12.37	31.65	0.48	0.33
60880	6.30	5.30	2.70	9.91	34.68	6.45	0.78
140880	.	0.00	.	11.08	31.85	0.12	0.60
140880	7.90	6.90	3.80	10.44	31.74	9.05	1.18
210880	.	0.00	.	11.71	31.24	5.45	0.85
210880	6.30	5.30	4.70	10.77	31.24	4.10	0.80
260880	.	0.00	.	10.64	31.24	7.38	1.00
260880	6.40	5.40	5.30	9.91	31.68	5.43	0.89
30980	.	0.00	.	9.20	32.60	15.35	1.52
30980	6.70	5.70	6.70	8.50	32.65	16.24	1.75
100980	.	0.00	.	10.57	31.12	11.66	1.29
100980	6.60	5.60	6.60	9.83	31.64	12.80	1.32
170980	.	0.00	.	10.54	31.38	15.41	1.69
170980	6.50	5.50	6.30	10.29	31.53	13.85	1.88
230980	.	0.00	.	9.34	32.25	17.91	1.43
230980	5.80	4.80	5.80	9.29	32.41	21.98	2.07
201080	.	0.00	.	9.07	32.34	11.61	1.36
201080	8.10	7.10	8.10	9.02	32.67	16.53	1.64
31280	.	0.00	.	7.00	28.62	17.67	1.72
31280	8.50	7.50	7.50	8.12	29.54	15.98	1.44
50381	.	0.00	.	7.18	31.20	10.22	1.23
50381	.	7.80	.	7.16	31.22	17.26	1.68

ENVIRONMENTAL MONITORING DATA FOR STATION J

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
280580	.	0.00	.	.	.	1.04	0.60
280580	7.20	6.20	3.20	.	.	1.56	0.56
40680	.	0.00	.	.	.	7.05	1.04
40680	4.48	3.48	4.48	.	.	7.35	1.02
110680	.	0.00	.	.	.	0.27	0.48
110680	8.00	7.00	4.00	.	.	2.92	0.68
180680	.	0.00	.	.	.	6.23	0.74
180680	5.10	4.10	5.10	.	.	9.16	0.81
250680	.	0.00	.	.	.	5.97	0.74
250680	7.40	6.40	5.60	.	.	4.59	0.77
90780	.	0.00	.	11.82	28.02	4.88	0.82
90780	7.45	6.45	3.20	10.58	26.33	8.83	1.19
160780	.	0.00	.	10.60	31.45	6.97	0.96
160780	5.50	4.50	4.80	9.57	32.01	8.24	1.07
230780	.	0.00	.	12.88	28.58	0.44	0.13
230780	6.40	5.40	1.60	10.82	31.33	4.90	0.88
10880	.	0.00	.	11.50	31.40	1.88	0.40
10880	7.00	6.00	7.00	10.50	31.70	5.21	0.66
60880	.	0.00	.	13.16	31.50	0.69	0.29
60880	6.30	5.30	2.50	10.34	31.54	14.40	1.42
140880	.	0.00	.	11.03	31.76	4.34	0.67
140880	7.70	6.70	3.50	10.40	31.92	5.65	0.79
210880	.	0.00	.	11.44	31.21	5.77	0.76
210880	5.80	4.80	5.20	10.83	31.47	4.81	0.80
260880	.	0.00	.	10.59	31.25	7.02	1.05
260880	6.30	5.30	5.00	10.04	31.60	5.63	0.98
30980	.	0.00	.	9.30	32.55	12.59	1.32
30980	6.70	5.70	6.70	8.50	32.55	15.43	1.67
100980	.	0.00	.	10.45	31.16	10.18	1.29
100980	6.50	5.50	6.50	9.73	31.84	14.32	1.49
170980	.	0.00	.	10.56	31.59	15.01	1.72
170980	6.30	5.30	7.00	10.33	31.76	4.91	0.87
230980	.	0.00	.	9.44	32.29	16.54	1.59
230980	6.70	5.70	6.70	9.04	32.55	21.65	1.97
201080	.	0.00	.	9.16	32.32	17.42	1.79
201080	8.00	7.00	8.00	8.94	32.69	16.30	1.71
31280	.	0.00	.	7.05	28.65	18.26	1.69
31280	8.50	7.50	7.50	8.12	29.53	20.94	1.91
50381	.	0.00	.	7.24	31.20	14.74	1.59
50381	8.40	7.40	8.40	7.29	31.20	6.87	0.99

ENVIRONMENTAL MONITORING DATA FOR STATION K

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
280580	.	0.00	.	.	.	0.78	0.70
280580	5.80	4.80	3.50	.	.	1.61	0.67
40680	.	0.00	.	.	.	5.41	0.81
40680	3.35	2.35	3.35	.	.	6.89	1.04
110680	.	0.00	.	.	.	0.21	0.36
110680	6.50	5.50	3.15	.	.	1.59	0.55
180680	.	0.00	.	.	.	4.23	0.58
180680	3.90	2.90	3.90	.	.	8.89	0.87
250680	.	0.00	.	.	.	3.62	0.63
250680	6.00	5.00	5.30	.	.	10.20	1.11
90780	.	0.00	.	12.41	27.78	2.81	0.77
90780	6.41	5.41	4.24	10.41	28.03	9.76	1.25
160780	.	0.00	.	10.41	31.59	9.76	1.07
160780	4.50	3.50	4.50	9.99	31.80	10.12	1.13
230780	.	0.00	.	13.10	28.75	0.23	0.11
230780	5.00	4.00	1.80	11.37	30.95	0.70	0.23
10880	.	0.00	.	11.90	31.20	2.32	0.62
10880	2.00	1.00	2.00	11.80	31.40	2.25	0.69
60880	.	0.00	.	12.68	31.28	0.36	0.22
60880	4.80	3.80	2.50	11.04	31.21	2.74	0.54
140880	.	0.00	.	11.27	31.95	4.83	0.77
140880	6.70	5.70	3.50	10.95	31.88	5.07	0.78
210880	.	0.00	.	11.78	31.45	3.98	0.68
210880	4.60	3.60	4.60	11.01	31.44	3.18	0.64
260880	.	0.00	.	10.75	31.38	3.35	0.74
260880	5.00	4.00	3.40	10.31	31.65	6.22	1.05
30980	.	0.00	.	9.50	32.15	9.58	1.26
30980	5.60	4.60	5.60	9.10	32.60	13.56	1.55
100980	.	0.00	.	10.35	31.16	15.02	1.53
100980	5.10	4.10	5.10	9.95	31.60	14.58	1.56
170980	.	0.00	.	10.68	31.70	12.51	1.50
170980	4.70	3.70	4.70	10.50	31.70	13.58	1.71
230980	.	0.00	.	9.62	32.03	19.43	1.90
230980	5.50	4.50	5.50	9.25	32.44	12.65	1.38
201080	.	0.00	.	9.20	32.44	16.35	1.77
201080	6.90	5.90	6.90	9.16	32.64	11.39	1.39
31280	.	0.00	.	6.90	28.50	21.21	2.03
31280	6.50	5.50	5.50	7.90	29.42	21.21	1.93
50381	.	0.00	.	7.18	31.18	18.26	1.68
50381	6.80	5.80	6.80	7.22	31.18	19.77	1.72

ENVIRONMENTAL MONITORING DATA FOR STATION M

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
210580	.	0.00	.	.	.	9.52	1.14
210580	1.60	0.60	1.60	.	.	11.55	1.38
280580	.	0.00	.	.	.	7.06	0.98
280580	3.30	2.30	3.30	.	.	10.80	1.36
40680	1.00	0.00	1.00	.	.	5.51	0.84
110680	.	0.00	.	.	.	10.08	1.21
110680	2.70	1.70	2.70	.	.	10.93	1.35
180680	.	0.00	.	.	.	9.81	1.01
180680	2.30	1.30	2.30	.	.	10.68	1.10
250680	.	0.00	.	.	.	9.90	1.09
250680	3.60	2.60	3.60	.	.	10.80	1.21
90780	.	0.00	.	9.74	28.61	7.32	1.14
90780	3.54	2.54	3.54	9.86	28.55	7.81	1.11
160780	.	0.00	.	11.82	31.44	6.01	1.09
160780	2.50	1.50	2.50	10.34	31.42	11.80	1.49
230780	.	0.00	.	11.58	30.42	3.62	0.80
230780	2.40	1.40	2.40	10.95	31.05	6.18	0.76
20880	.	0.00	.	9.70	31.90	16.70	1.72
20880	4.00	3.00	4.00	9.50	32.10	10.90	1.25
60880	.	0.00	.	10.97	31.65	8.43	1.13
60880	3.50	2.50	3.50	10.26	31.20	12.90	1.36
140880	.	0.00	.	9.40	32.02	17.50	1.65
140880	4.00	3.00	4.00	9.51	31.80	14.60	1.42
210880	.	0.00	.	10.70	31.25	6.04	0.93
210880	3.10	2.10	3.10	10.18	31.70	8.15	1.20
260880	.	0.00	.	9.75	31.70	14.60	1.73
260880	4.50	3.50	4.50	9.34	31.53	8.82	1.33
30980	.	0.00	.	8.85	32.55	16.44	1.67
30980	3.40	2.40	3.40	8.90	32.00	20.50	2.12
100980	.	0.00	.	9.52	31.90	11.47	1.28
100980	3.20	2.20	3.20	9.46	31.86	7.47	1.37
170980	.	0.00	.	10.74	31.72	10.50	1.46
170980	3.00	2.00	3.00	9.78	31.94	17.24	1.78
230980	.	0.00	.	9.12	32.07	23.61	2.04
230980	2.80	1.80	2.80	9.03	32.15	23.50	2.08
201080	.	0.00	.	9.43	32.04	17.15	1.76
201080	4.00	3.00	4.00	9.02	32.11	11.84	1.46
31280	.	0.00	.	7.44	28.33	23.36	2.20
31280	5.30	4.30	4.30	7.50	28.59	13.69	1.48
50381	.	0.00	.	7.46	30.98	13.64	1.21
50381	4.50	3.50	4.50	7.42	31.00	20.27	1.77
260381	.	0.00	.	8.04	31.20	8.85	1.03
260381	2.10	1.10	2.10	8.13	31.82	7.71	1.03
150581	.	0.00	.	9.12	29.45	12.53	1.46
150581	3.20	2.20	3.20	9.10	29.51	8.31	1.16
240581	.	0.00	.	9.25	31.75	9.05	1.33
240581	2.00	1.00	2.00	8.90	31.86	13.40	1.68
290581	.	0.00	.	9.62	31.16	.	.
290581	2.20	1.20	2.20	9.22	31.26	.	.
60681	.	0.00	.	9.62	31.90	5.58	1.39
120681	.	0.00	.	10.10	31.38	11.35	1.04
120681	2.70	1.70	2.70	9.30	31.53	9.43	1.08
190681	.	0.00	.	9.22	28.82	9.04	1.09
50781	.	0.00	.	10.38	31.71	14.05	1.04
50781	3.80	2.80	3.80	10.28	31.77	5.39	0.83
120781	.	0.00	.	10.92	31.36	13.65	1.19
120781	2.80	1.80	2.80	10.62	30.64	17.25	1.37

ENVIRONMENTAL MONITORING DATA FOR STATION M

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
190781	.	0.00	.	11.04	31.68	8.91	1.01
190781	3.80	2.80	3.80	.	.	13.65	1.37
90881	.	0.00	.	11.96	32.37	9.67	1.11
90881	.	1.60	2.60	10.95	32.25	13.65	1.50
160881	.	0.00	.	11.35	31.20	6.93	1.04
160881	4.30	3.30	4.30	10.85	31.63	10.31	1.17
70981	.	0.00	.	11.42	30.95	8.90	1.30
70981	2.50	1.50	2.50	10.99	31.20	11.07	1.52
140981	.	0.00	.	10.64	31.76	16.22	1.56
140981	4.30	3.30	4.30	10.66	31.66	12.26	1.43
200981	.	0.00	.	9.36	32.30	9.49	1.40
200981	3.00	2.00	3.00	9.32	32.32	19.38	1.88

ENVIRONMENTAL MONITORING DATA FOR STATION D

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
160780	.	0.00	.	9.95	30.90	10.80	1.08
160780	.	2.00	9.20	9.14	31.62	14.90	1.40
230780	.	0.00	.	10.91	30.90	6.59	1.03
230780	.	2.00	7.10	9.85	31.62	8.39	1.23
20880	.	0.00	.	9.90	31.70	15.40	1.61
20880	.	2.00	13.00	9.40	31.70	18.00	1.75
60880	.	0.00	.	10.03	31.71	16.20	1.59
60880	.	2.00	.	9.58	31.63	8.69	1.21
140880	.	0.00	.	10.10	31.37	9.94	1.16
140880	.	2.00	11.00	9.72	31.91	15.20	1.61
220880	.	0.00	.	9.52	31.88	16.47	1.69
220880	.	2.00	9.80	9.44	31.90	8.21	1.28
260880	.	0.00	.	9.64	31.91	17.48	1.82
260880	.	2.00	10.30	9.26	32.05	11.41	1.49
30980	.	0.00	.	8.95	32.30	16.32	2.05
30980	.	2.00	9.50	8.80	32.25	17.86	2.06
100980	.	0.00	.	9.29	31.70	17.58	1.76
100980	.	2.00	10.50	9.00	31.94	9.62	1.40
170980	.	0.00	.	9.55	31.67	14.92	1.71
170980	11.50	2.00	11.50	9.61	31.45	12.06	1.33
230980	.	0.00	.	9.70	31.06	11.84	1.42
230980	.	2.00	12.50	9.30	31.80	13.32	1.53
201080	.	0.00	.	9.19	31.83	10.99	1.56
201080	.	2.00	12.00	9.02	31.97	19.25	1.84
31280	.	0.00	.	7.25	27.64	17.40	1.53
31280	.	2.00	9.50	7.40	27.54	18.65	1.80

ENVIRONMENTAL MONITORING DATA FOR STATION P

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
230780	.	0.00	.	13.44	28.40	0.16	0.18
230780	4.40	3.40	1.90	11.10	29.89	0.88	0.39
20880	.	0.00	.	11.70	32.00	9.39	1.27
20880	6.50	5.50	6.50	9.70	32.00	13.10	1.75
60880	.	0.00	.	10.53	31.69	8.64	1.05
60880	6.00	5.00	6.00	10.48	31.26	9.28	1.09
140880	.	0.00	.	10.22	31.62	13.90	1.50
140880	6.30	5.30	6.30	10.00	31.28	15.00	1.54
210880	.	0.00	.	10.92	31.22	5.80	0.99
210880	5.00	4.00	5.00	10.46	31.13	6.20	1.01
260880	.	0.00	.	10.61	31.05	10.77	1.45
260880	3.60	2.60	3.60	9.86	31.78	10.57	1.11
30980	.	0.00	.	9.45	31.80	17.46	1.85
30980	3.80	2.80	3.80	9.20	32.00	14.01	1.52
100980	.	0.00	.	9.92	31.54	8.51	1.24
100980	4.90	3.90	4.90	9.61	31.80	15.02	1.66
170980	.	0.00	.	10.20	29.82	10.94	1.25
170980	4.20	3.20	4.20	10.07	30.03	12.37	1.39
230980	.	0.00	.	9.91	31.84	17.91	1.93
230980	5.80	4.80	5.80	9.71	31.71	12.10	1.45
201080	.	0.00	.	9.29	31.99	13.62	1.54
201080	5.90	4.90	5.90	9.05	32.09	16.80	1.81
31280	.	0.00	.	6.40	28.80	16.65	1.66
31280	7.00	6.00	6.00	7.90	29.16	22.47	2.09
50381	.	0.00	.	7.39	31.01	14.17	1.25
50381	3.80	2.80	3.80	7.59	31.97	17.43	1.58
260381	.	0.00	.	6.12	31.28	2.51	0.58
260381	2.80	1.80	2.80	8.04	31.24	5.50	0.90
150581	.	0.00	.	9.54	29.42	8.11	1.21
150581	5.60	4.60	5.60	9.20	29.40	6.47	1.12
240581	.	0.00	.	10.18	31.68	6.20	1.08
240581	3.20	2.20	3.20	9.27	31.90	9.52	1.12
290581	.	0.00	.	10.43	31.05	4.36	1.08
290581	3.80	2.80	3.80	9.95	31.08	7.17	1.55
60681	.	0.00	.	9.20	32.10	7.12	1.13
60681	3.50	2.50	3.50	9.05	32.41	6.54	0.97
120681	.	0.00	.	.	.	5.77	0.83
120681	5.00	4.00	5.00	.	.	5.89	0.83
190681	.	0.00	.	9.20	29.00	6.08	1.04
190681	3.00	2.00	3.00	9.24	28.93	13.66	1.52
50781	.	0.00	.	10.14	31.60	13.93	1.22
50781	5.40	4.40	5.40	9.68	31.90	10.54	1.02
120781	.	0.00	.	11.28	29.42	9.18	1.06
120781	5.00	4.00	5.00	10.50	29.71	12.32	1.10
190781	.	0.00	.	10.00	30.84	15.55	1.50
190781	2.50	1.50	2.50	9.92	30.72	7.05	1.37
90881	.	0.00	.	14.00	30.85	0.38	0.40
90881	4.00	3.00	2.20	10.65	31.81	7.43	0.97
160881	.	0.00	.	11.41	31.26	6.96	0.90
160881	5.20	4.20	5.20	11.03	31.24	5.93	0.83
70981	.	0.00	.	11.12	31.52	13.64	1.60
70981	4.50	3.50	4.50	10.68	31.58	10.32	1.43
140981	.	0.00	.	11.47	31.35	2.37	0.61
140981	5.80	4.80	3.80	10.90	31.55	8.42	1.08
200981	.	0.00	.	9.30	32.04	11.75	1.47
200981	4.00	3.00	4.00	9.30	32.10	15.23	1.61

ENVIRONMENTAL MONITORING DATA FOR STATION Q

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
2603A1	.	0.00	.	8.22	31.62	5.36	0.72
2603A1	3.90	2.90	3.90	8.13	31.57	14.84	1.55
1505A1	.	0.00	.	9.38	29.12	9.99	1.64
1505A1	6.50	5.50	4.50	9.33	29.28	10.35	1.25
2405A1	.	0.00	.	9.30	31.70	5.70	1.08
2405A1	5.00	4.00	5.00	9.05	31.84	10.39	1.33
2905A1	.	0.00	.	12.28	31.10	1.51	0.82
2905A1	4.80	3.80	3.00	9.19	31.60	8.04	1.29
606A1	.	0.00	.	9.21	32.51	4.23	0.95
606A1	4.60	3.60	4.60	8.90	31.90	11.93	1.65
1206A1	.	0.00	.	10.19	31.85	5.96	0.91
1206A1	6.50	5.50	6.50	9.69	31.89	10.85	0.39
1906A1	.	0.00	.	9.19	28.90	10.97	1.26
1906A1	4.20	3.20	4.20	9.10	28.93	7.70	1.09
507A1	.	0.00	.	10.60	31.63	6.35	0.96
507A1	4.40	3.40	4.40	10.60	31.57	7.70	0.61
1207A1	.	0.00	.	12.46	29.51	6.56	1.01
1207A1	6.00	5.00	6.00	11.21	30.00	10.92	1.10
1907A1	.	0.00	.	12.75	31.31	0.57	0.40
1907A1	5.90	4.90	3.00	11.90	31.47	2.43	0.48
908A1	.	0.00	.	12.73	32.34	0.57	0.35
908A1	5.90	4.90	2.20	11.03	32.42	3.60	0.57
1608A1	.	0.00	.	12.50	30.80	0.77	0.44
1608A1	6.00	5.00	6.00	11.78	31.10	0.77	0.42
709A1	.	0.00	.	12.22	29.83	6.64	1.04
709A1	5.50	4.50	5.50	10.54	31.50	7.28	1.00
1409A1	.	0.00	.	11.02	31.60	10.32	1.17
1409A1	6.80	5.80	5.00	10.83	31.72	5.81	0.95
2009A1	.	0.00	.	9.57	32.24	13.72	1.69
2009A1	5.50	4.50	5.50	9.04	32.47	16.45	1.73

ENVIRONMENTAL MONITORING DATA FOR STATION R

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
260381	.	0.00	.	8.12	30.70	16.92	1.72
260381	.	3.00	.	8.04	31.10	13.07	1.42
260381	7.20	6.20	7.20	8.03	31.10	12.40	1.38
150581	.	0.00	.	8.62	29.30	13.40	1.55
150581	.	3.00	.	8.68	29.28	11.33	1.33
150581	8.60	7.60	8.60	8.57	29.38	8.71	1.25
290581	.	0.00	.	9.14	31.35	8.81	1.12
290581	.	3.00	.	8.90	31.52	8.88	1.21
290581	8.00	7.00	8.00	8.78	31.56	14.41	1.64
60681	.	0.00	.	8.82	31.01	9.43	1.17
60681	.	3.00	.	8.60	29.10	6.89	0.91
60681	8.50	7.50	.	8.87	29.08	11.74	1.15
120681	.	0.00	.	9.18	31.58	16.85	1.52
120681	.	3.00	.	8.94	31.69	10.97	0.91
120681	8.50	7.50	8.50	8.96	31.81	19.47	1.65
190681	.	0.00	.	8.99	28.84	10.58	1.00
190681	.	3.00	.	8.89	28.88	13.85	1.26
190681	7.00	6.00	.	8.78	28.90	5.39	0.83
120781	.	0.00	.	11.26	31.02	15.74	1.32
120781	.	3.00	.	10.46	31.18	5.88	0.84
120781	7.90	6.90	7.90	10.29	31.13	15.24	1.32
90881	.	0.00	.	11.67	32.00	14.60	1.54
90881	.	3.00	.	10.95	32.50	8.19	1.01
90881	7.40	6.40	4.10	10.09	31.83	16.76	1.59
160881	.	0.00	.	10.16	31.91	10.54	1.13
160881	.	3.00	.	10.00	32.06	14.05	1.31
160881	5.30	4.30	5.30	11.10	30.20	13.28	1.17
70981	.	0.00	.	10.46	31.23	8.50	1.39
70981	.	3.00	.	9.88	31.64	12.18	1.56
70981	8.00	7.00	8.00	9.99	31.37	13.45	1.78

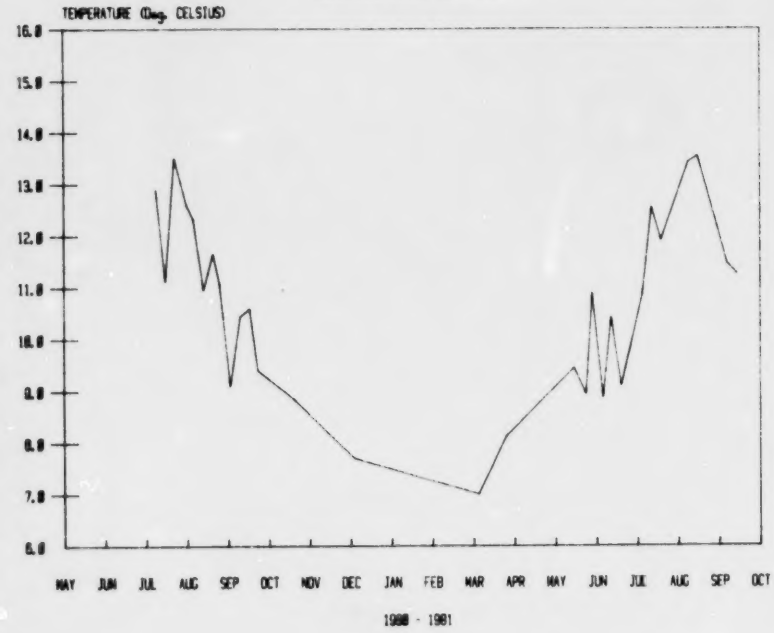
ENVIRONMENTAL MONITORING DATA FOR STATION S

DATE	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
260381	.	0.00	.	7.98	29.29	5.96	0.90
260381	.	3.00	.	7.98	30.88	9.72	1.25
260381	11.20	10.20	11.20	8.02	31.28	16.25	1.61
150581	.	0.00	.	8.76	29.59	8.71	1.08
150581	.	3.00	.	8.47	29.42	9.95	1.24
150581	11.40	10.40	8.50	8.53	29.55	7.31	1.22
240581	.	0.00	.	9.39	31.69	.	.
240581	.	3.00	.	9.30	31.59	5.39	1.25
240581	12.10	11.10	9.40	8.90	31.73	8.08	1.25
290581	.	0.00	.	9.48	31.29	9.95	1.29
290581	.	3.00	.	8.96	31.27	14.91	1.69
290581	13.00	12.00	10.00	8.64	31.89	11.56	1.46
60681	.	0.00	.	8.85	31.80	8.47	0.96
60681	.	3.00	.	8.65	32.01	8.08	1.26
60681	10.20	9.20	10.10	8.84	29.25	11.35	1.32
120681	.	0.00	.	9.71	31.50	9.16	1.00
120681	.	3.00	.	9.34	31.65	12.31	1.17
120681	14.00	13.00	13.90	9.00	31.62	7.70	1.17
190681	.	0.00	.	9.03	28.82	15.55	1.44
190681	.	3.00	.	8.90	28.76	8.77	1.17
190681	11.80	10.80	10.50	8.78	29.00	12.31	1.17
50781	.	0.00	.	11.38	31.69	14.01	1.35
50781	.	3.00	.	9.33	31.74	13.08	1.26
50781	13.70	12.70	13.70	9.29	31.77	13.89	1.35
120781	.	0.00	.	10.84	31.28	8.15	1.01
120781	.	3.00	.	9.94	31.37	12.32	1.81
120781	13.00	12.00	12.00	9.97	30.22	15.51	1.01
190781	.	0.00	.	10.70	31.34	9.78	0.97
190781	.	3.00	.	10.13	31.50	16.68	1.48
190781	15.20	14.20	7.40	9.87	31.55	17.82	1.54
90881	.	0.00	.	11.95	32.01	16.31	1.54
90881	.	3.00	.	10.11	32.55	18.77	1.66
90881	11.80	10.80	5.50	9.64	32.62	20.55	1.83
160881	.	0.00	.	10.15	31.64	11.16	1.13
160881	.	3.00	.	10.25	31.56	12.51	1.17
160881	15.30	14.30	8.50	9.66	32.04	13.47	1.31
70981	.	0.00	.	.	.	15.15	1.69
70981	.	3.00	.	.	.	14.83	1.69
70981	15.00	14.00	12.00	.	.	13.45	1.60
140981	.	0.00	.	10.24	31.76	16.85	1.70
140981	.	3.00	.	10.00	31.82	14.44	1.55
140981	14.40	13.40	6.00	9.72	31.88	18.98	1.73

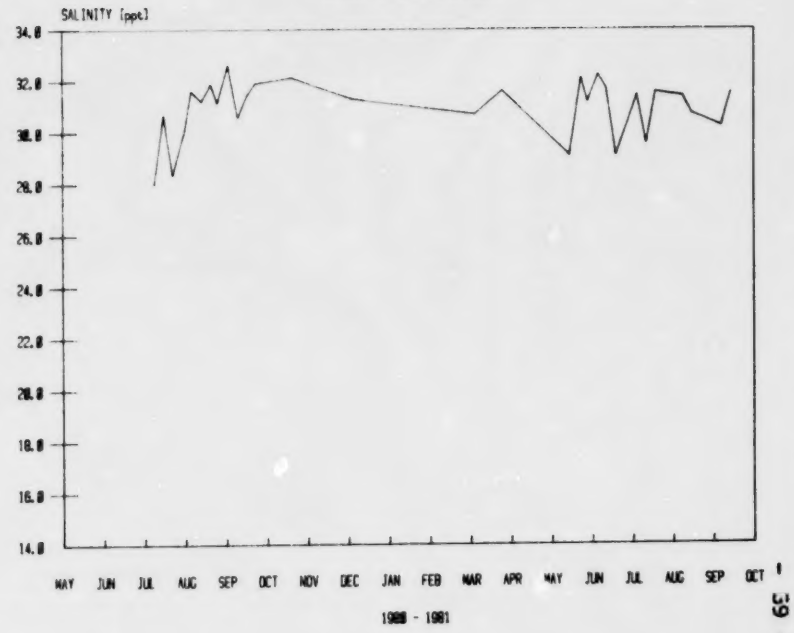
APPENDIX III

Time series graphs of temperature, salinity, combined nitrite-nitrate nitrogen and ortho-phosphate by station, May, 1980 - October, 1981. Data are plotted for surface and bottom samples only (for exact depth at which bottom samples were collected, refer to 'SAMPLE DEPTH' column in Appendix II).

TEMPERATURE VALUES FOR STATION A



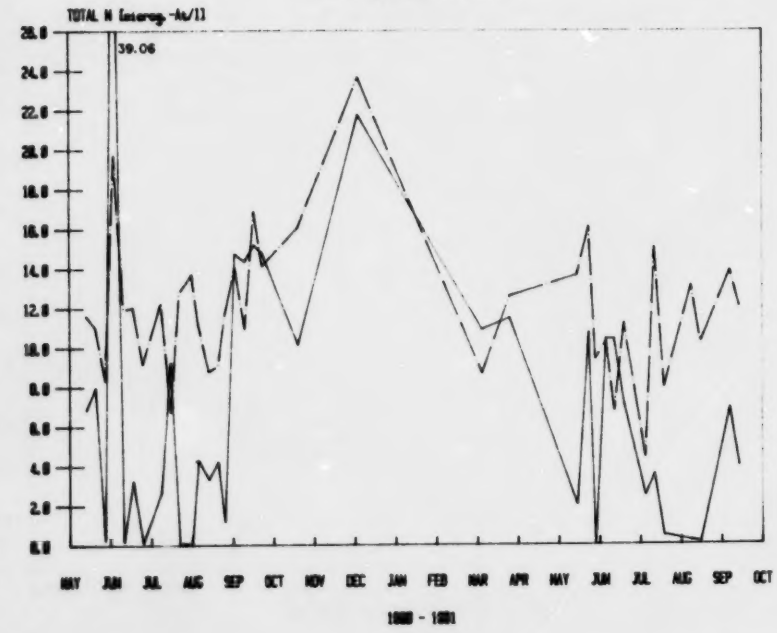
SALINITY VALUES FOR STATION A



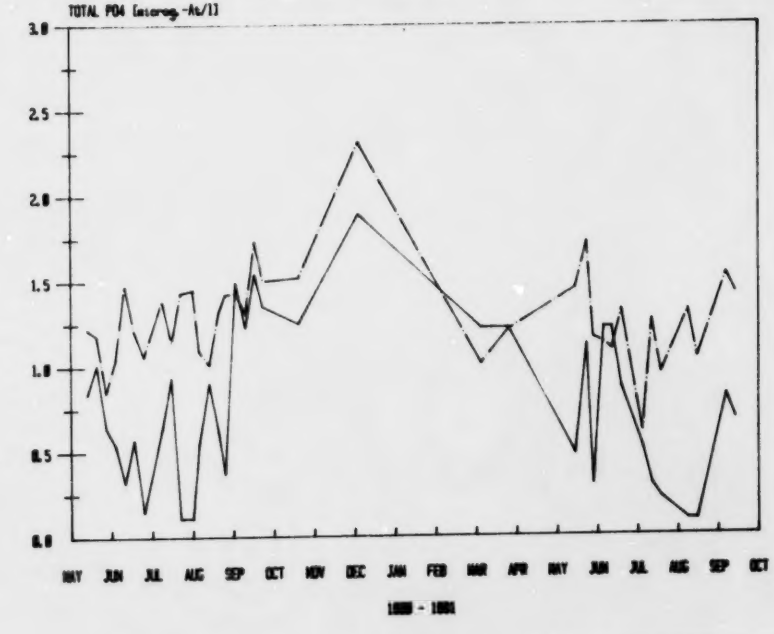
SURFACE

BOTTOM

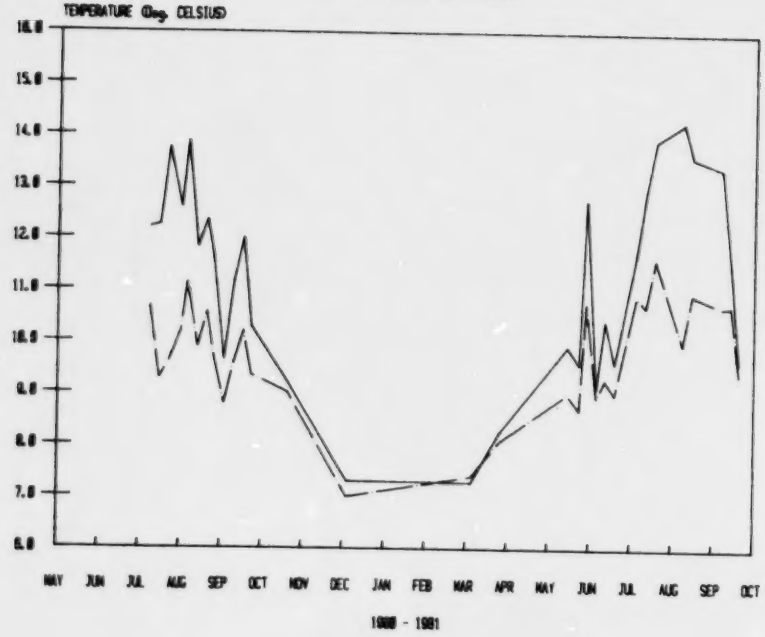
TOTAL N (as NO3, NO2) FOR STATION A



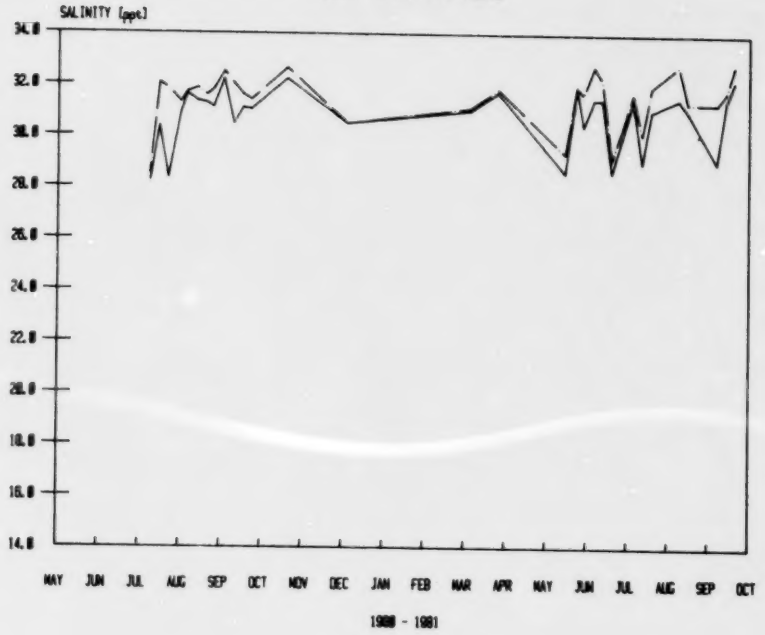
TOTAL PO4 VALUES FOR STATION A



TEMPERATURE VALUES FOR STATION B



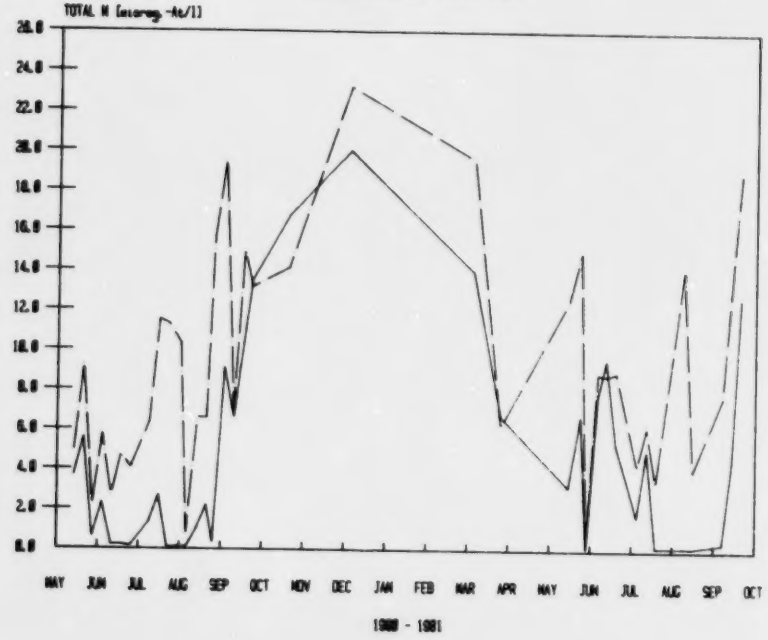
SALINITY VALUES FOR STATION B



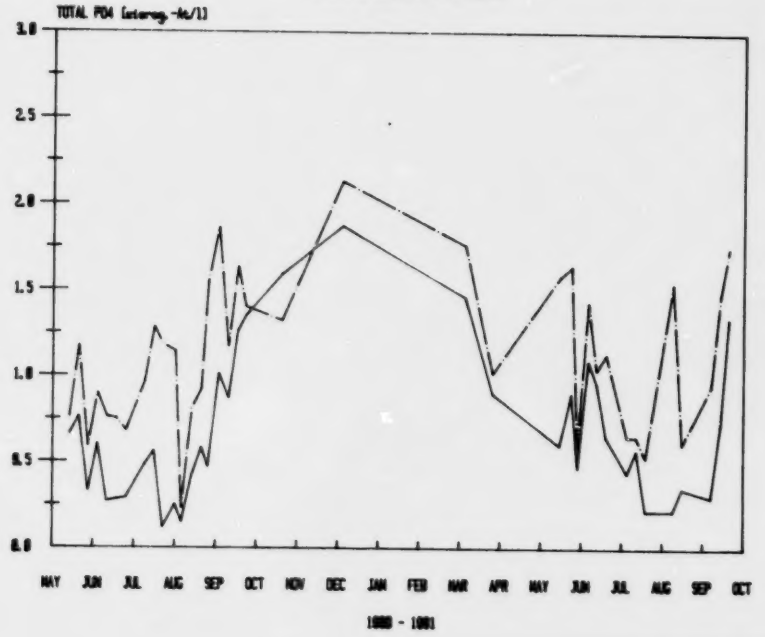
SURFACE

BOTTOM

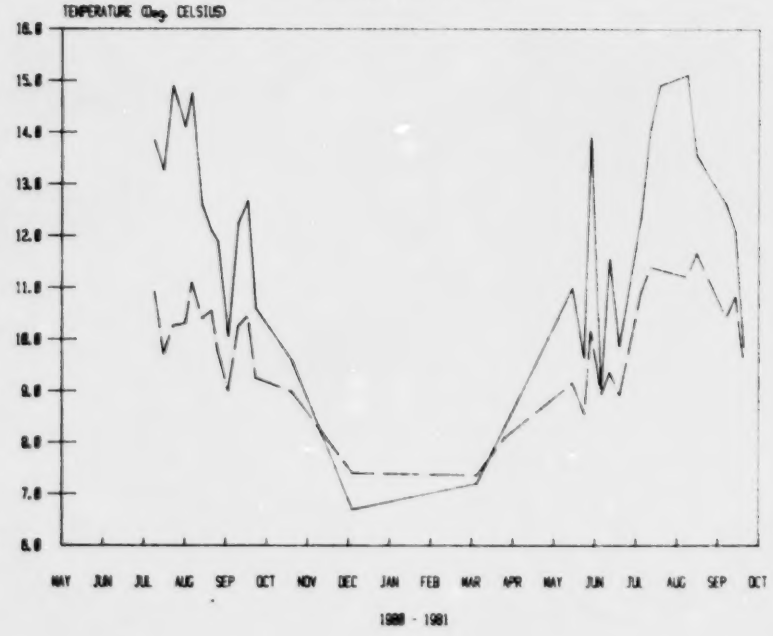
TOTAL N (as NO3, NO2) FOR STATION B



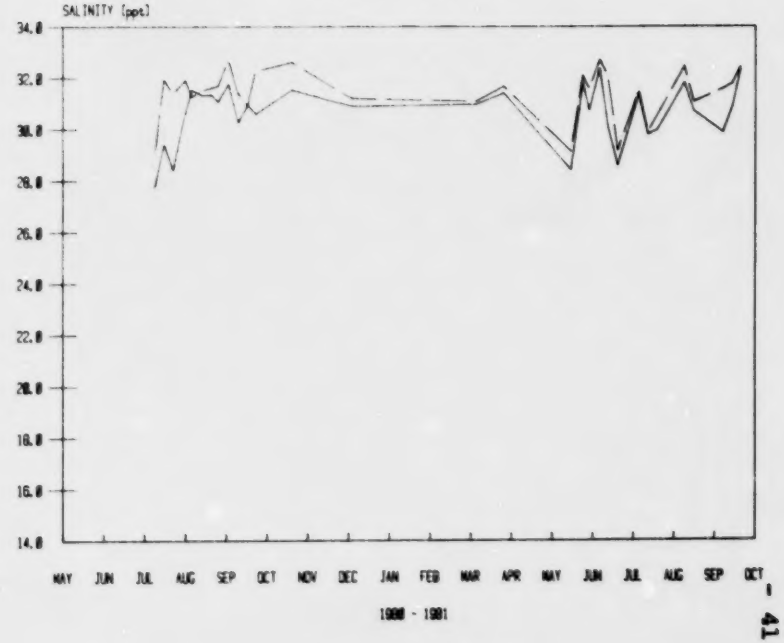
TOTAL PO4 VALUES FOR STATION B



TEMPERATURE VALUES FOR STATION C



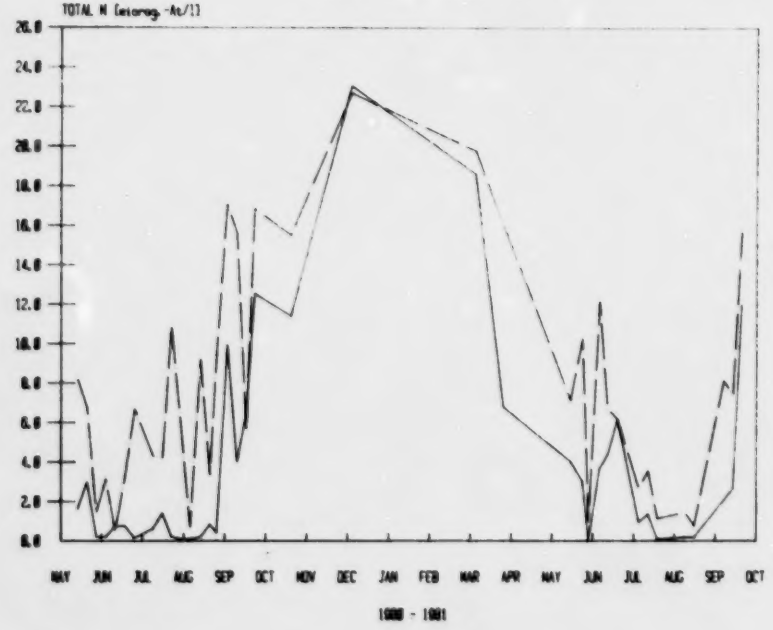
SALINITY VALUES FOR STATION C



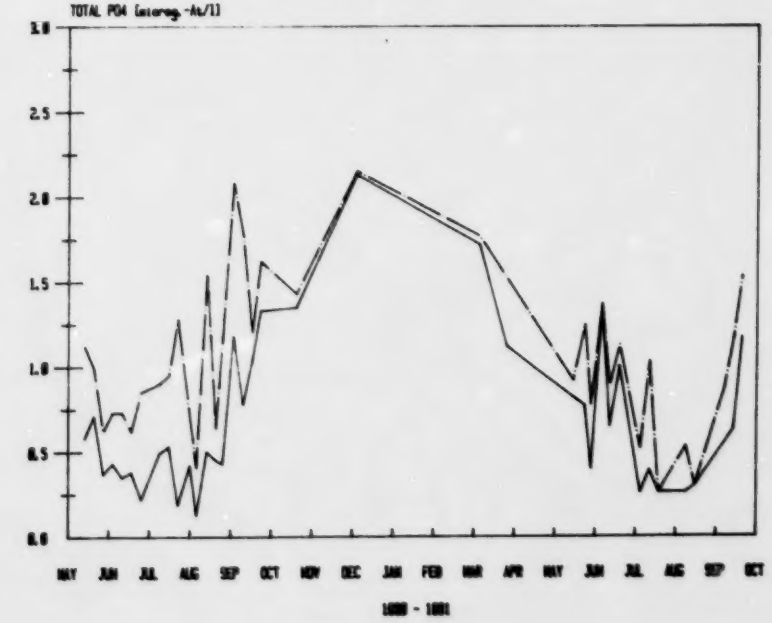
SURFACE

BOTTOM

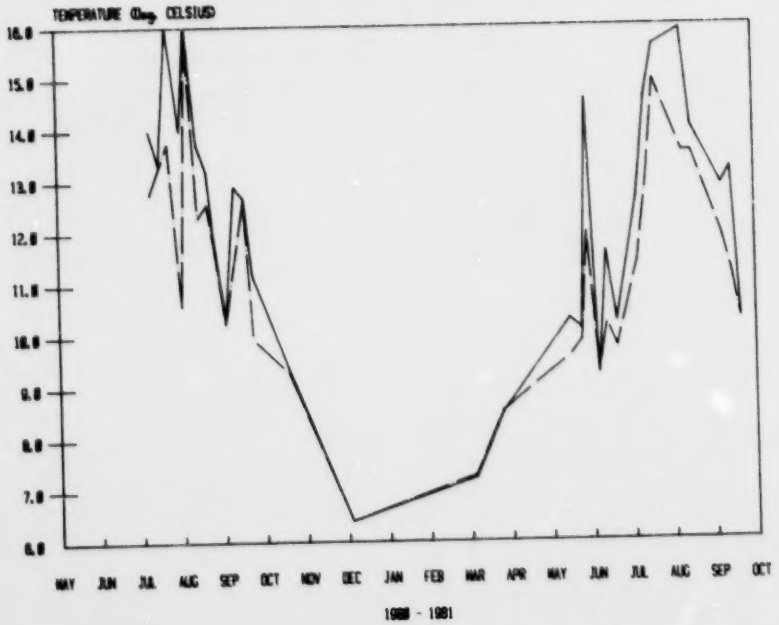
TOTAL N (as NO3,NO2) FOR STATION C



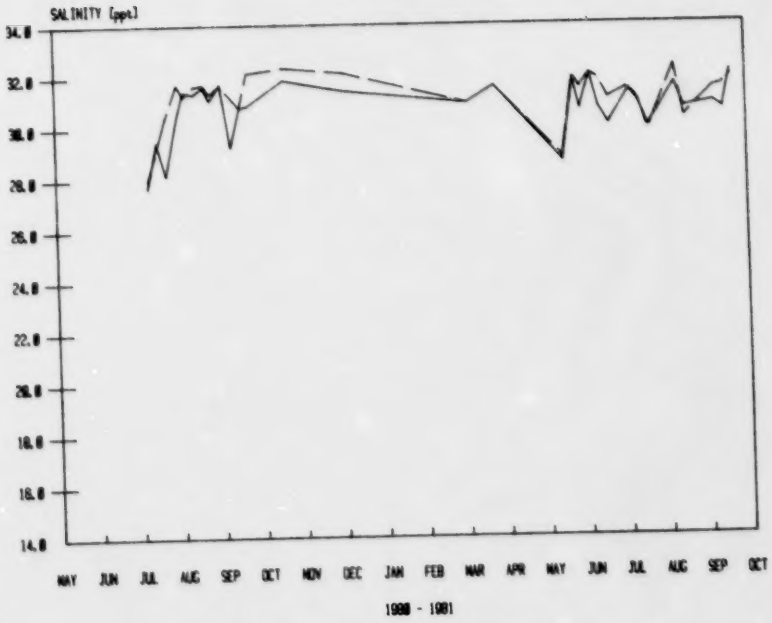
TOTAL PO4 VALUES FOR STATION C



TEMPERATURE VALUES FOR STATION D



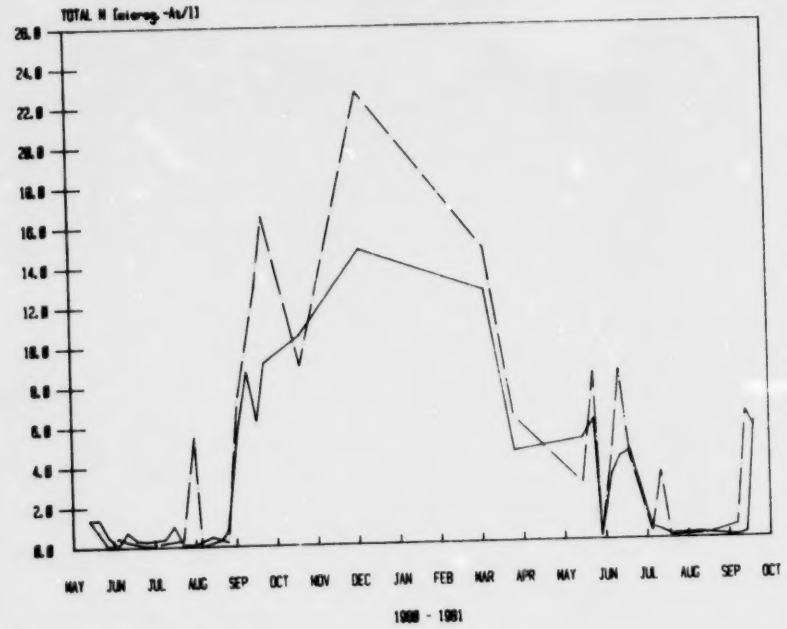
SALINITY VALUES FOR STATION D



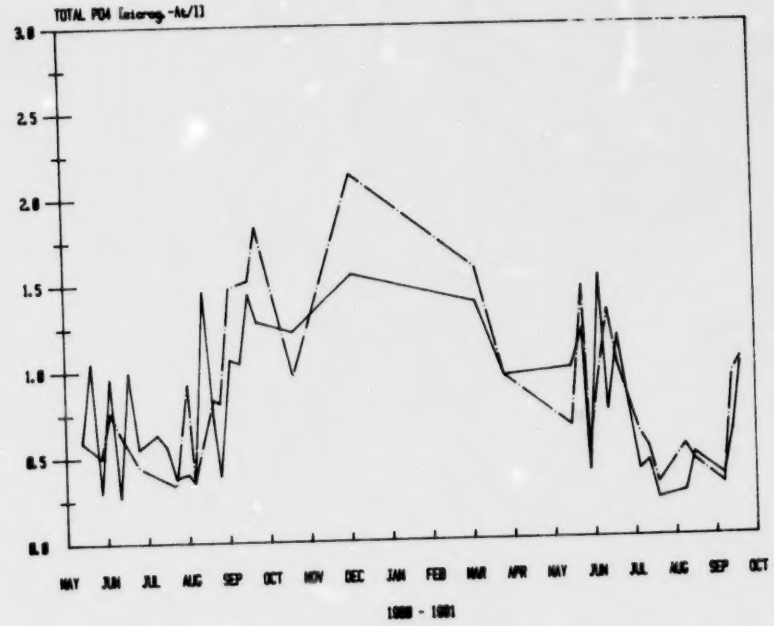
SURFACE

BOTTOM

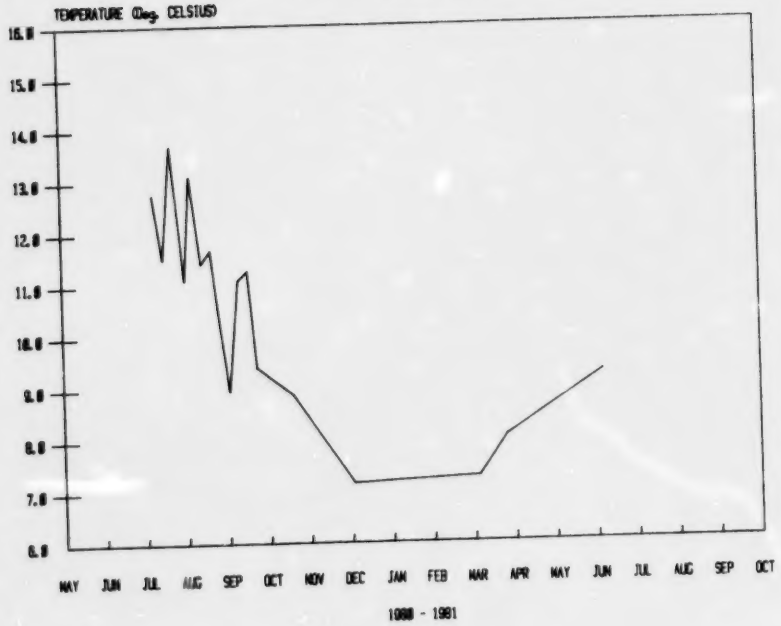
TOTAL N (as NO3, NO2) FOR STATION D



TOTAL PO4 VALUES FOR STATION D



TEMPERATURE VALUES FOR STATION E



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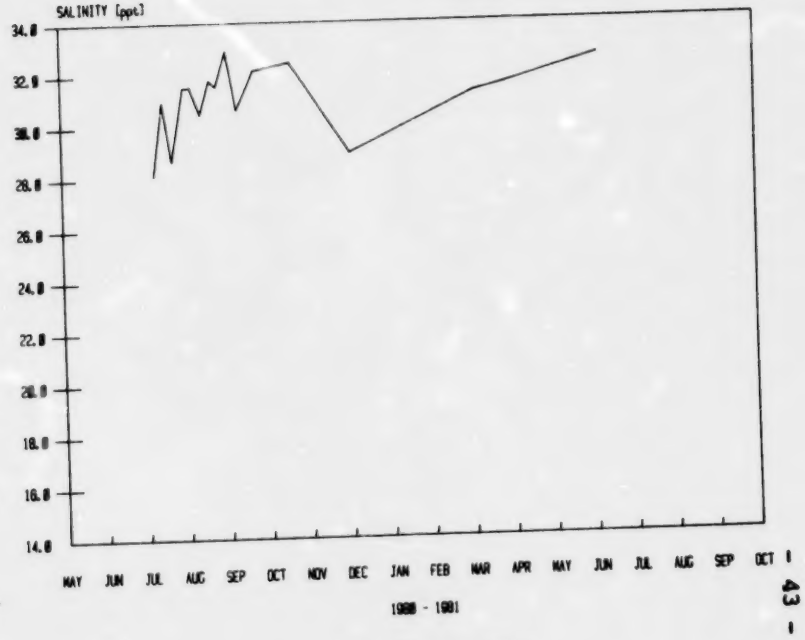

SURFACE

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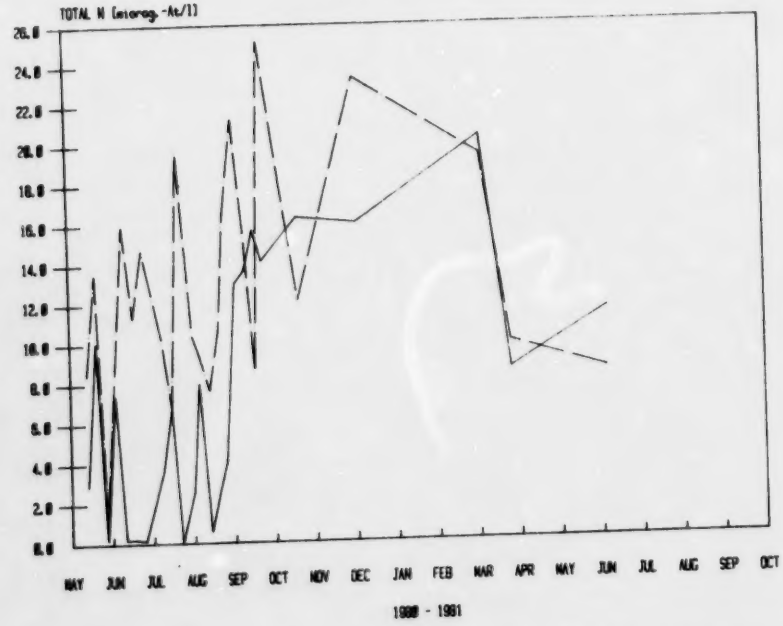
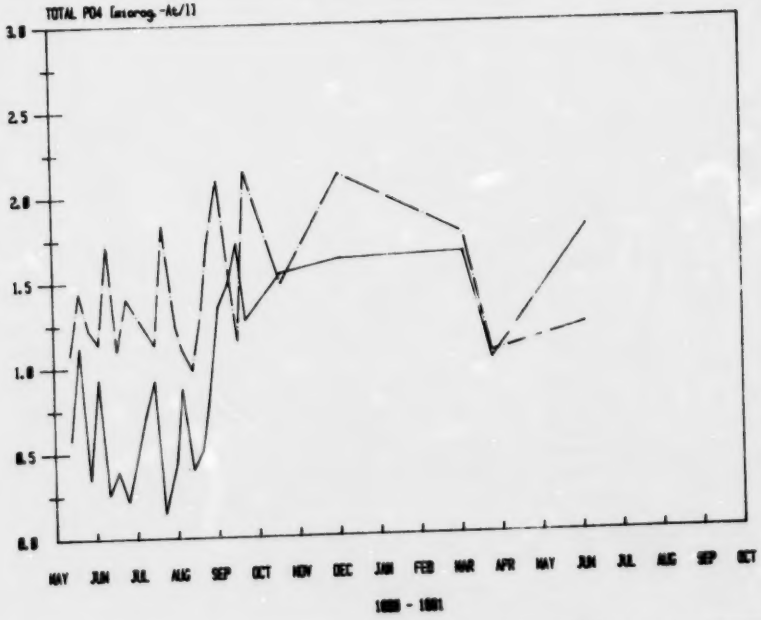
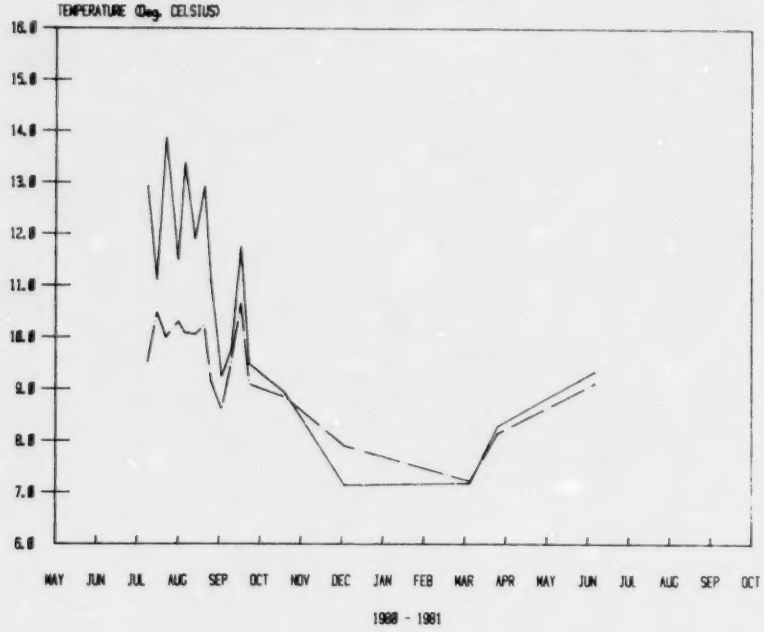
TOTAL N (as NO3,NO2) FOR STATION E



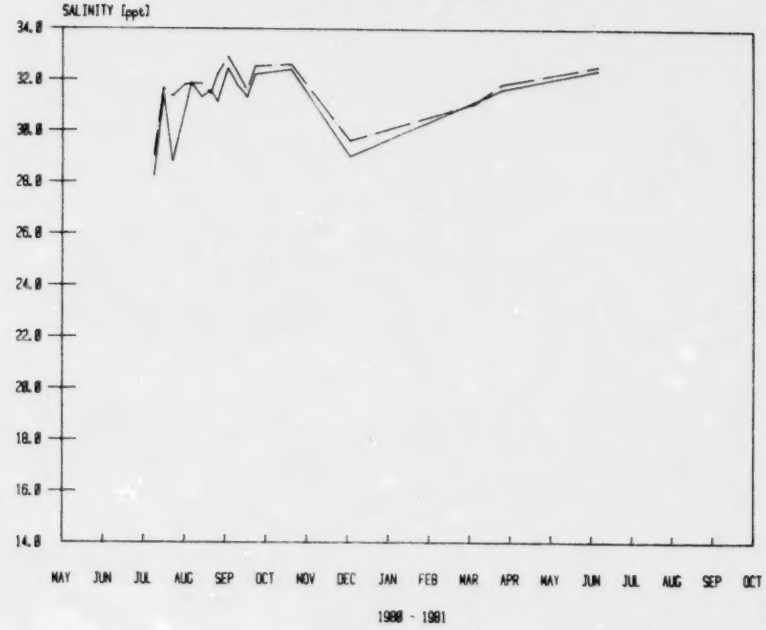
TOTAL PO4 VALUES FOR STATION E



TEMPERATURE VALUES FOR STATION F



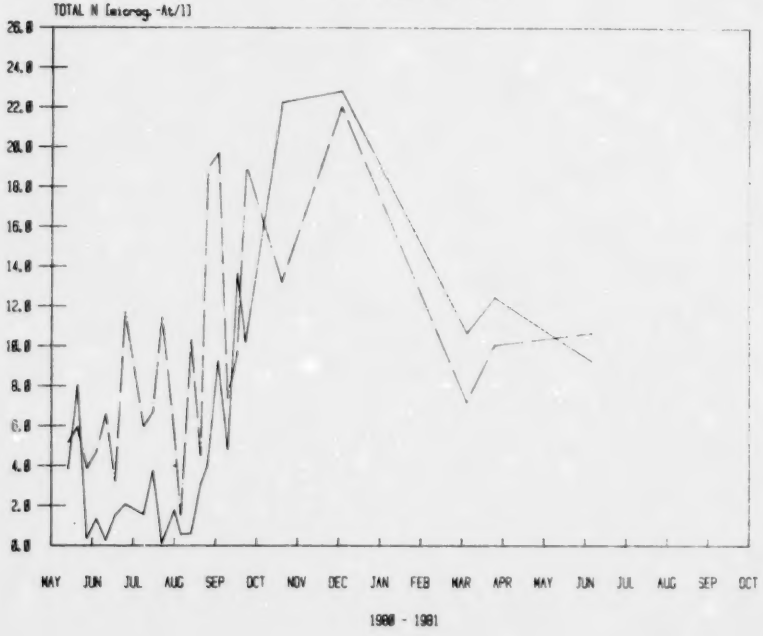
SALINITY VALUES FOR STATION F



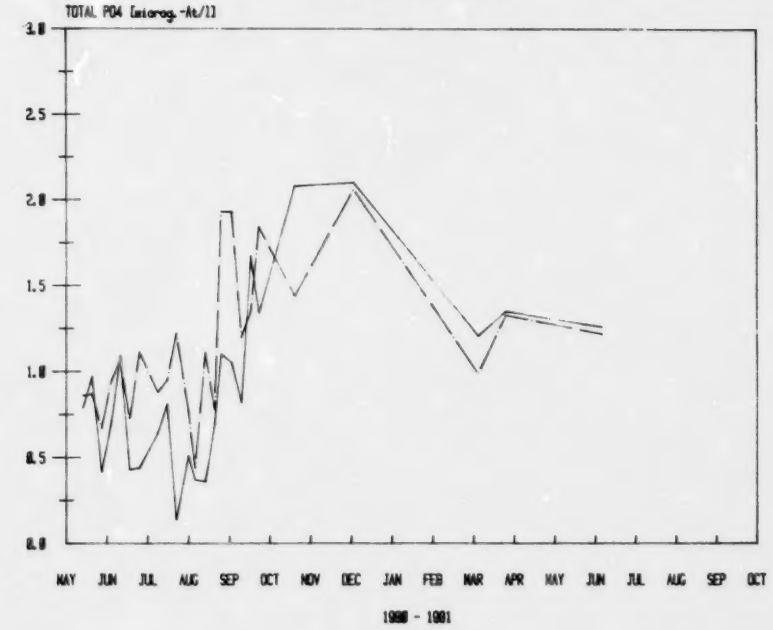
SURFACE

BOTTOM

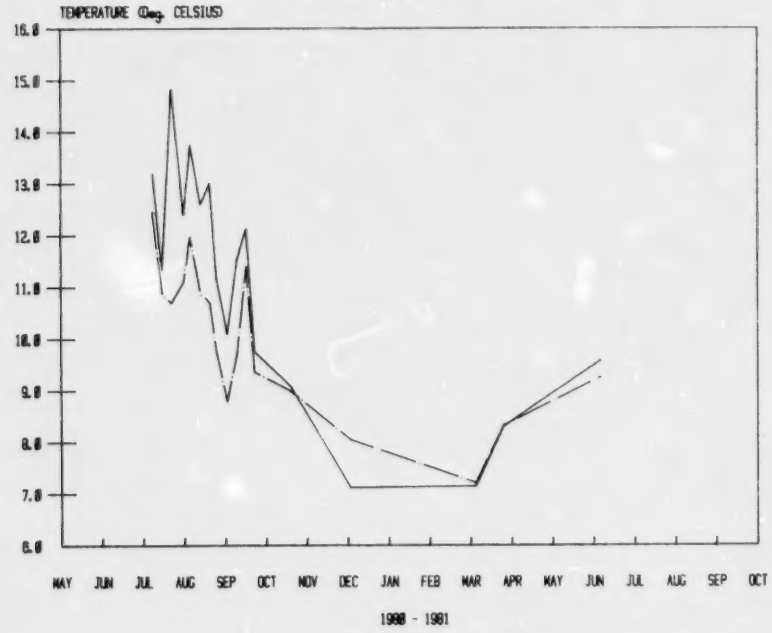
TOTAL N (as NO3, NO2) FOR STATION F



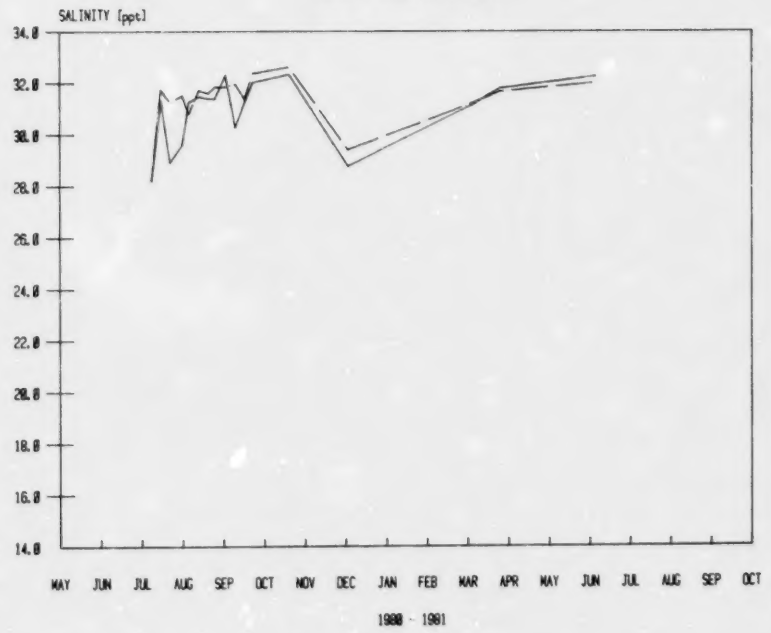
TOTAL PO4 VALUES FOR STATION F



TEMPERATURE VALUES FOR STATION G



SALINITY VALUES FOR STATION G



SURFACE

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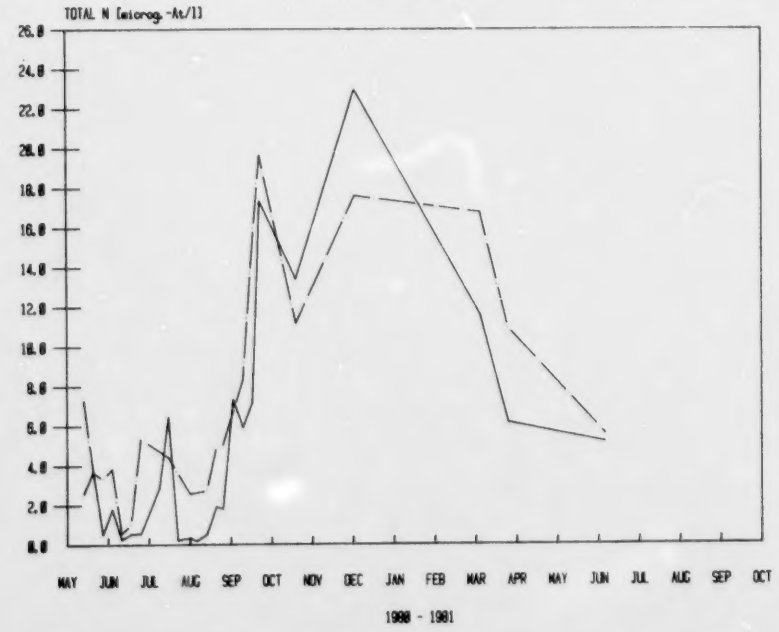
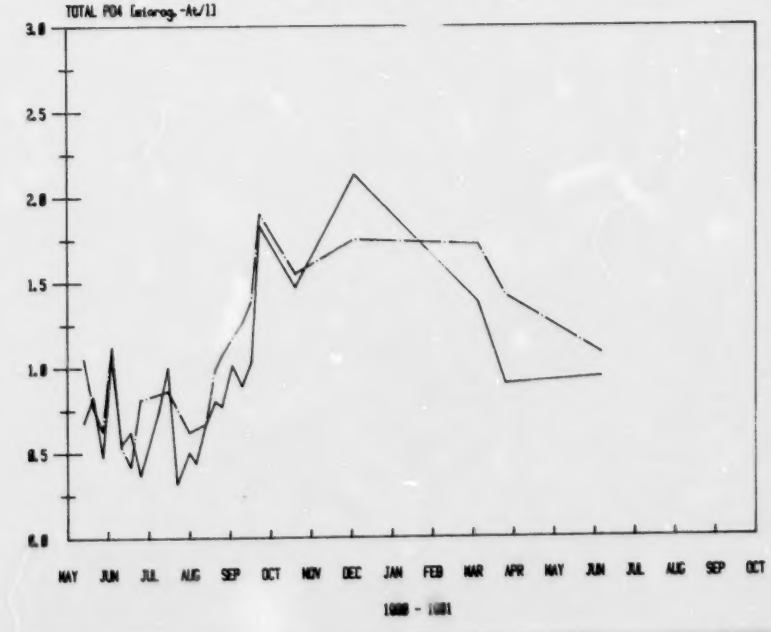
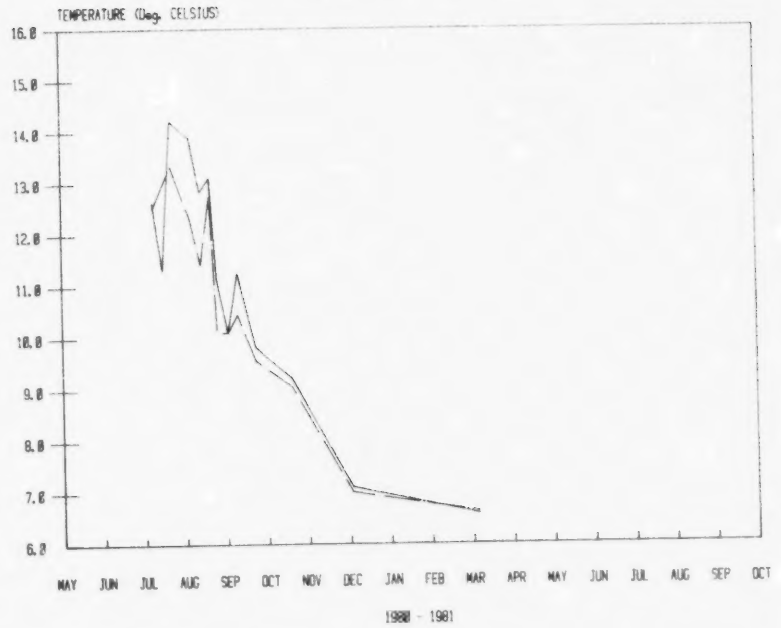
TOTAL N (as NO3, NO2) FOR STATION G



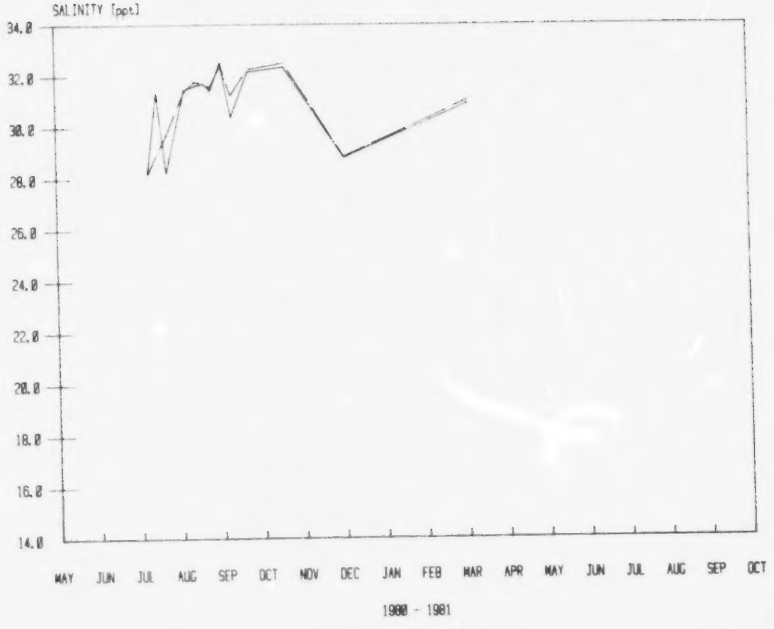
TOTAL PO4 VALUES FOR STATION G



TEMPERATURE VALUES FOR STATION H



SALINITY VALUES FOR STATION H



SURFACE

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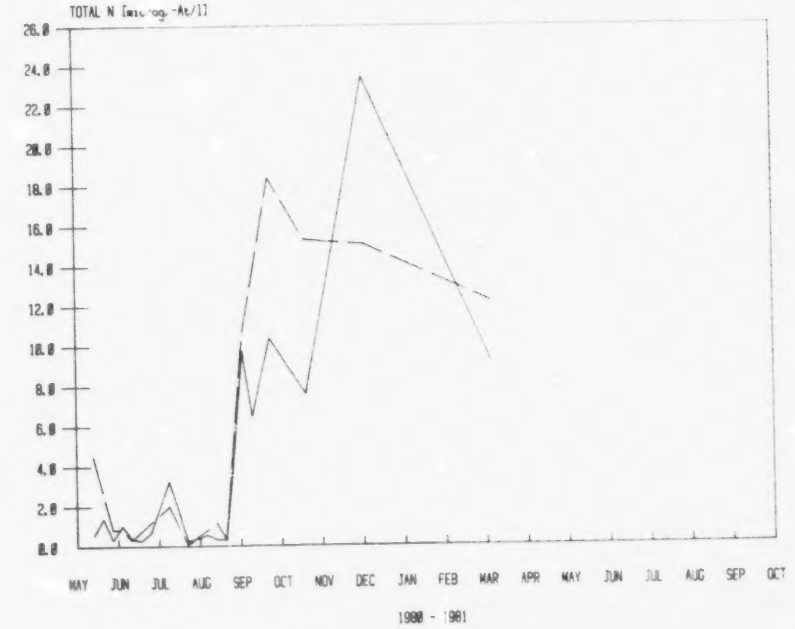
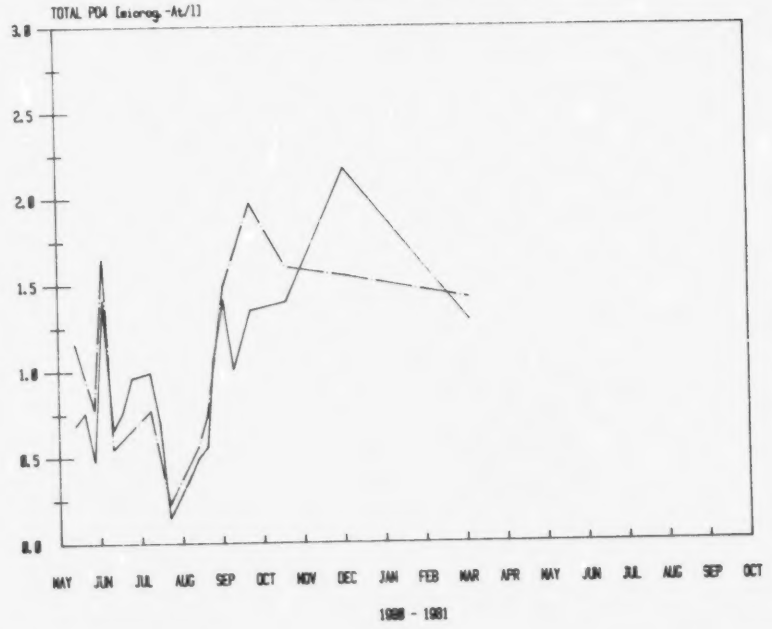
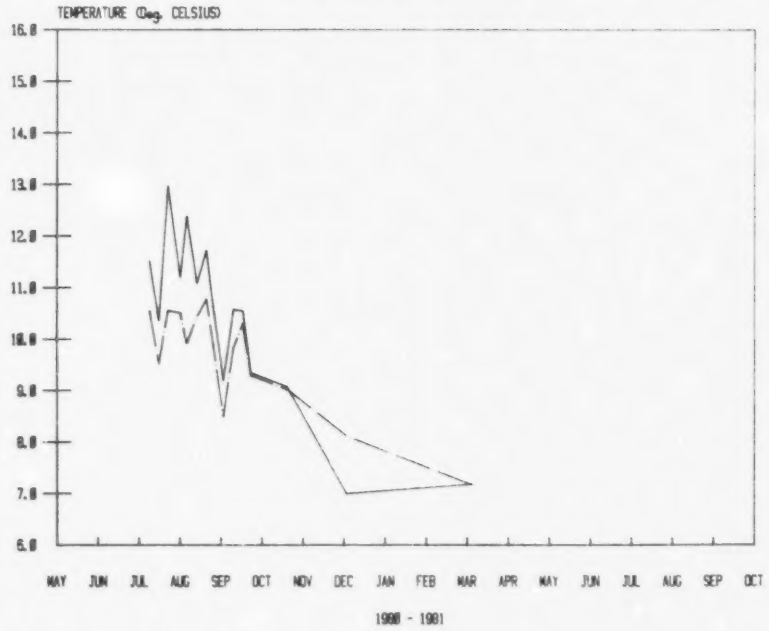


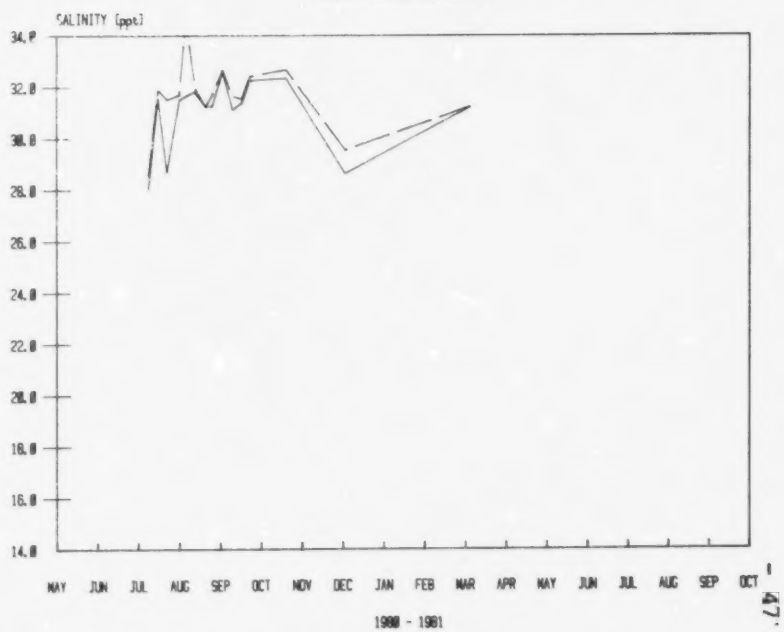
TOTAL PO4 VALUES FOR STATION H



TEMPERATURE VALUES FOR STATION I



SALINITY VALUES FOR STATION I



SURFACE

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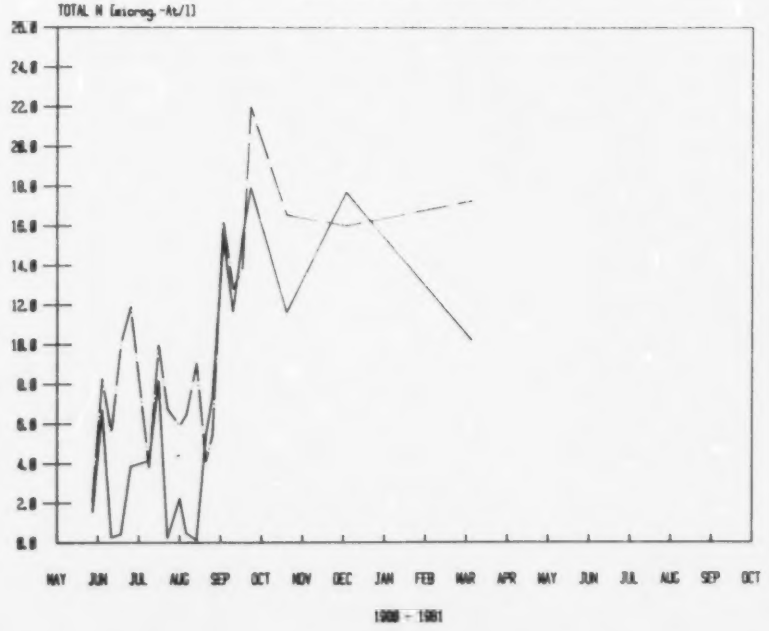
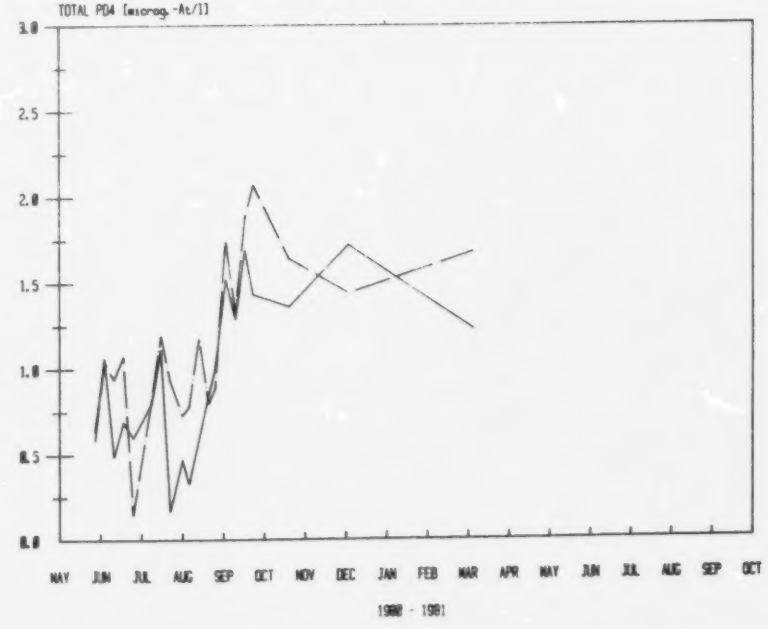
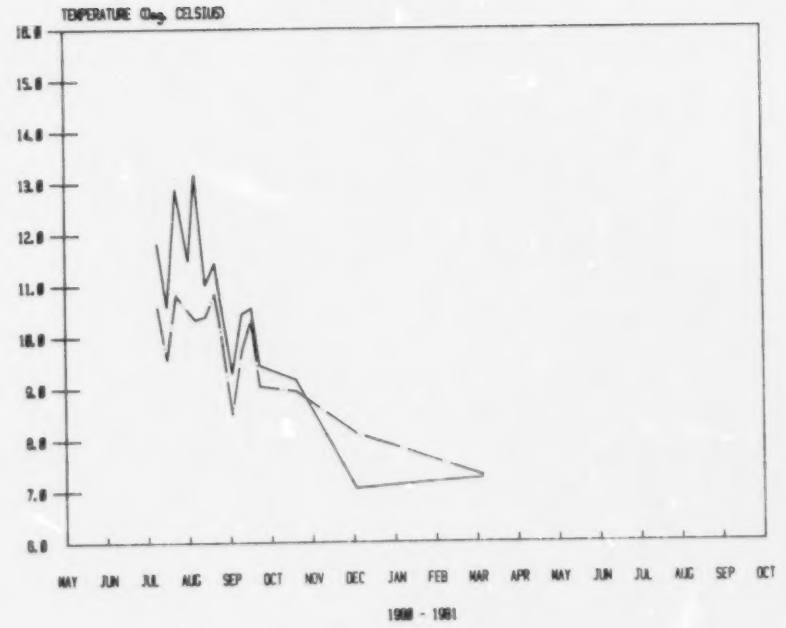


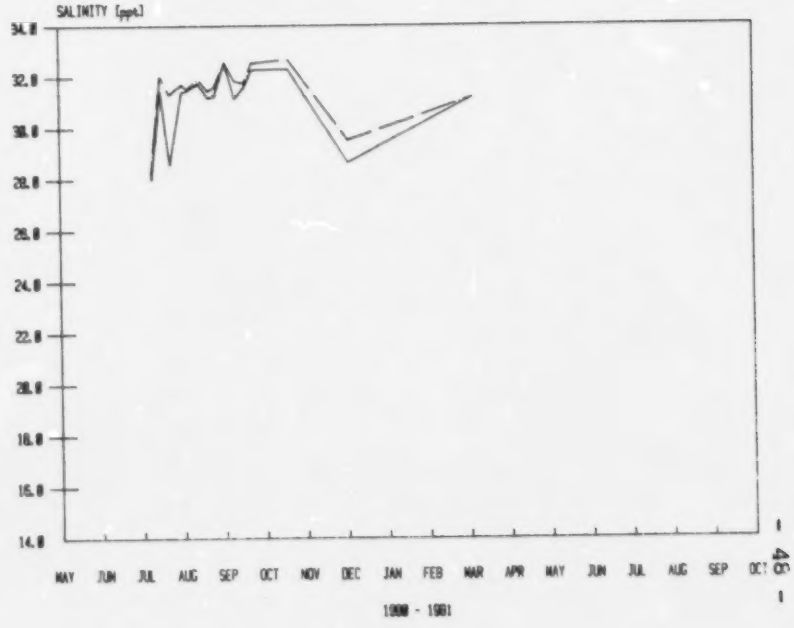
TOTAL PO4 VALUES FOR STATION I



TEMPERATURE VALUES FOR STATION J



SALINITY VALUES FOR STATION J



SURFACE

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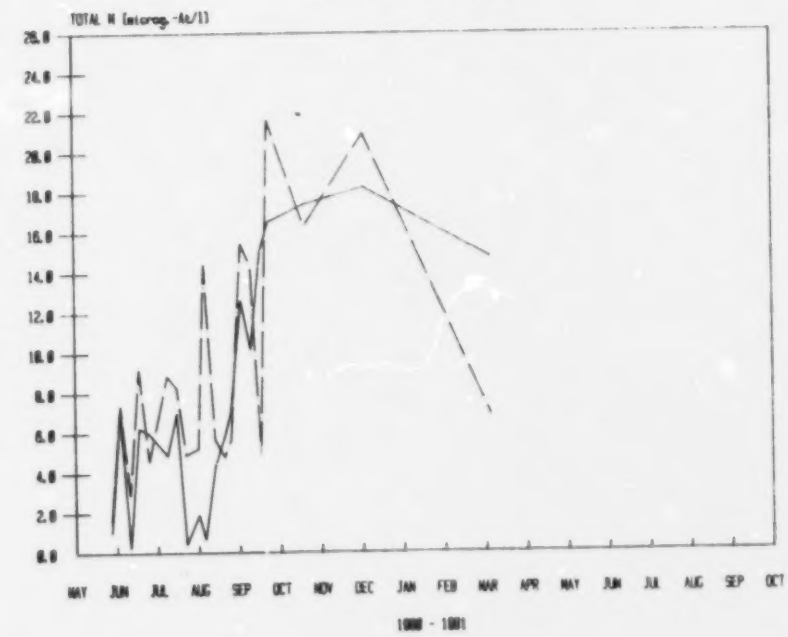
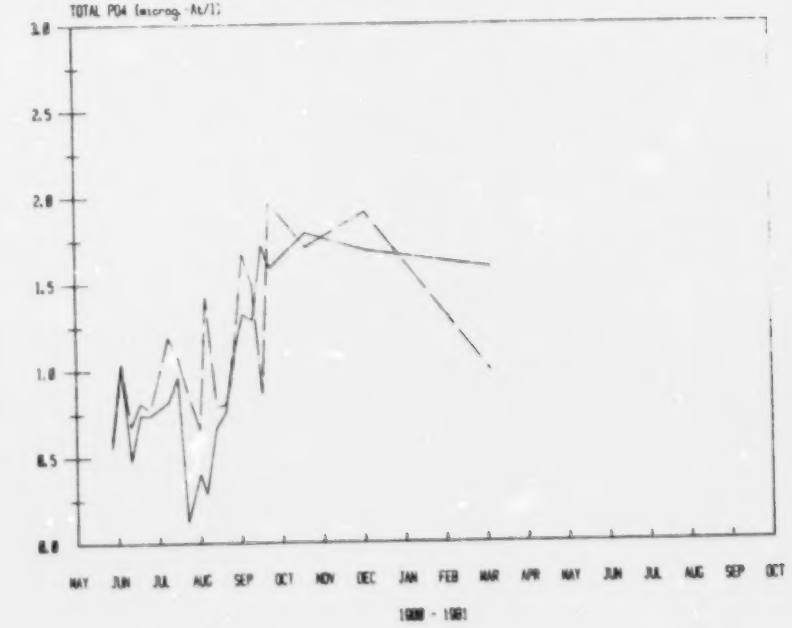
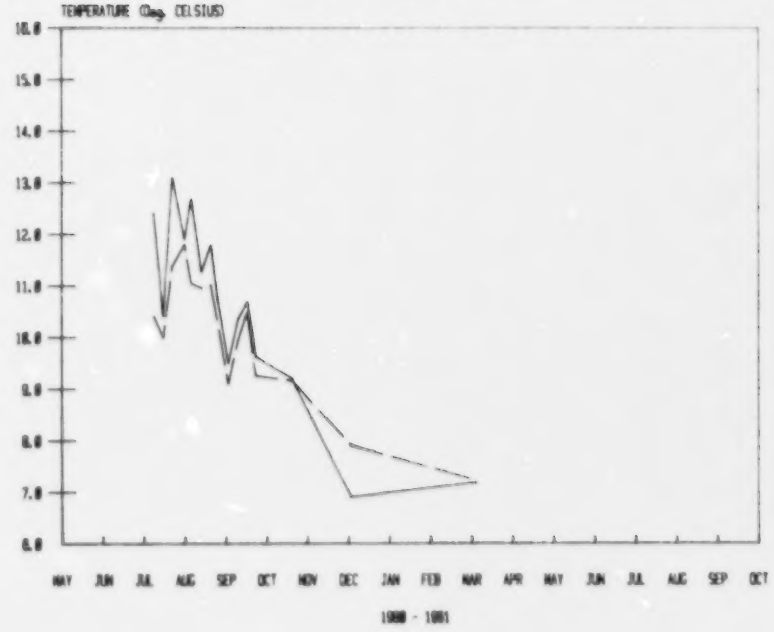
TOTAL N (as NO3, NO2) FOR STATION J



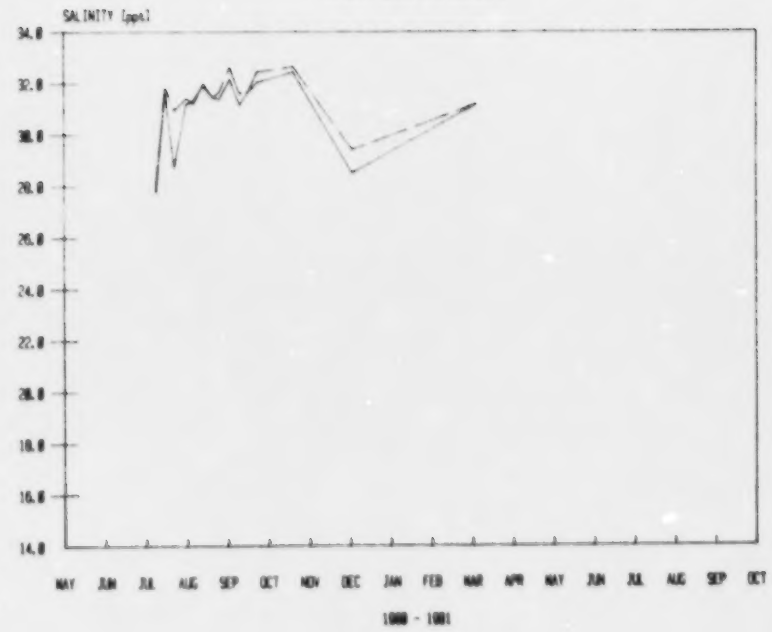
TOTAL PO4 VALUES FOR STATION J



TEMPERATURE VALUES FOR STATION K



SALINITY VALUES FOR STATION K



SURFACE

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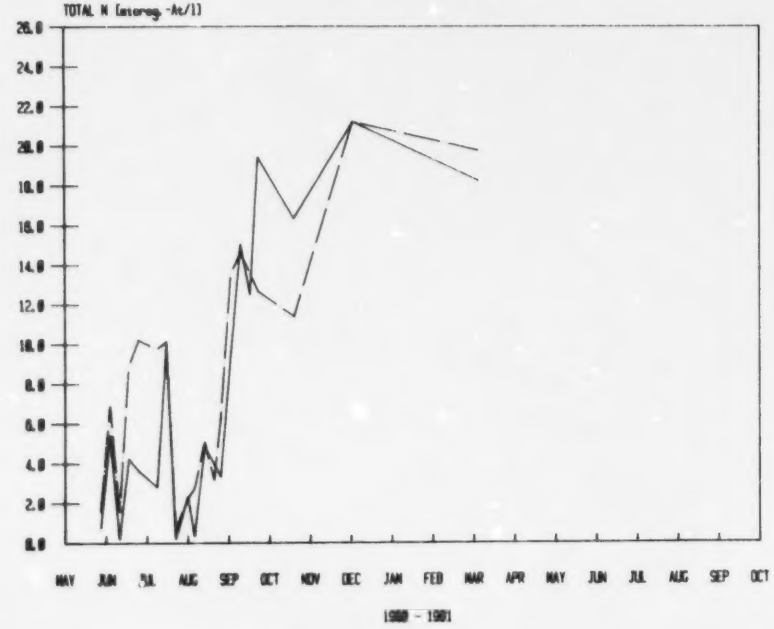
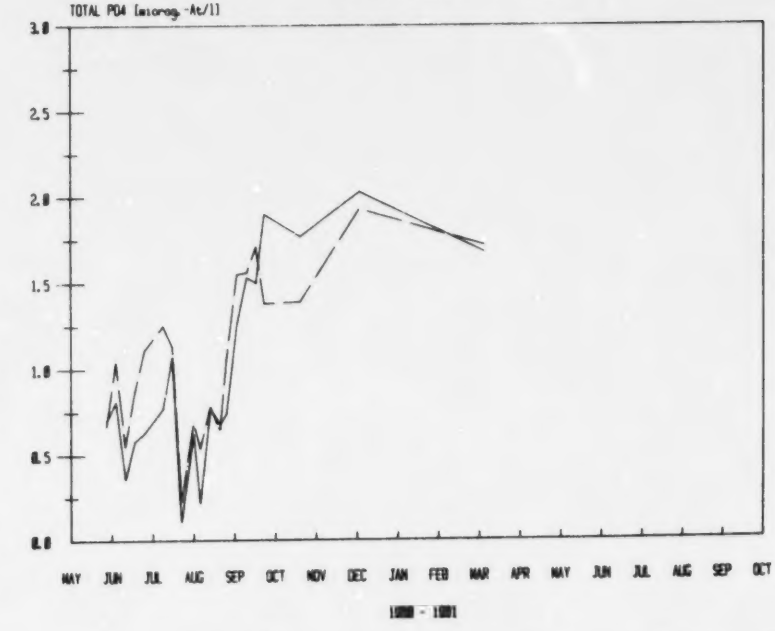
TOTAL N (as NO3, NO2) FOR STATION K

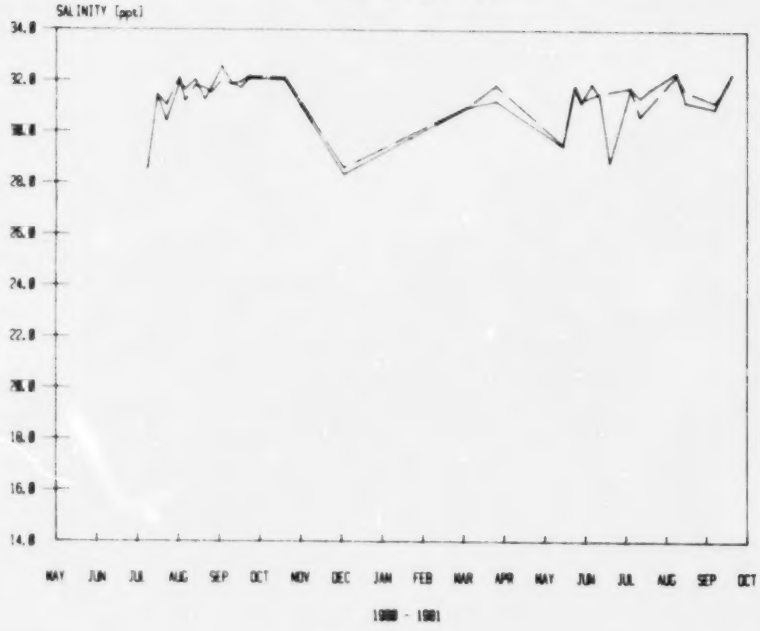


TOTAL PO4 VALUES FOR STATION K



TEMPERATURE VALUES FOR STATION M

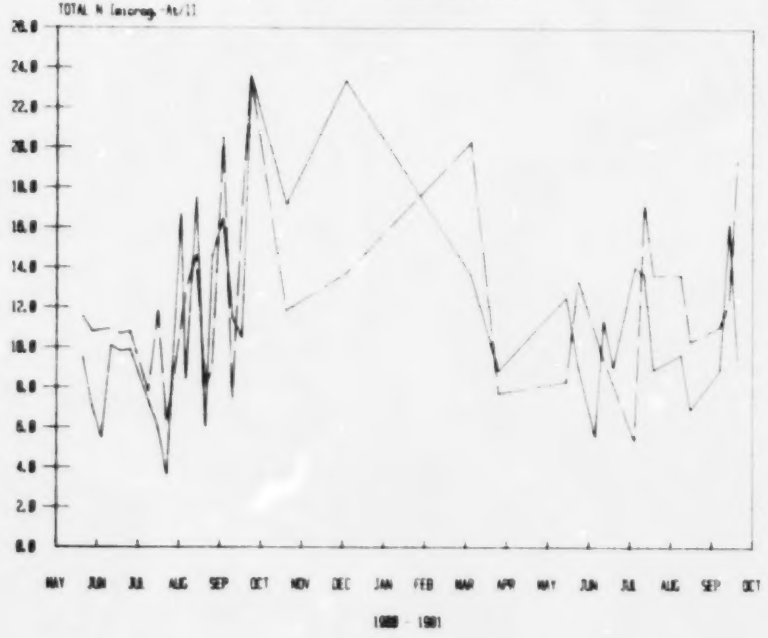
SALINITY VALUES FOR STATION M



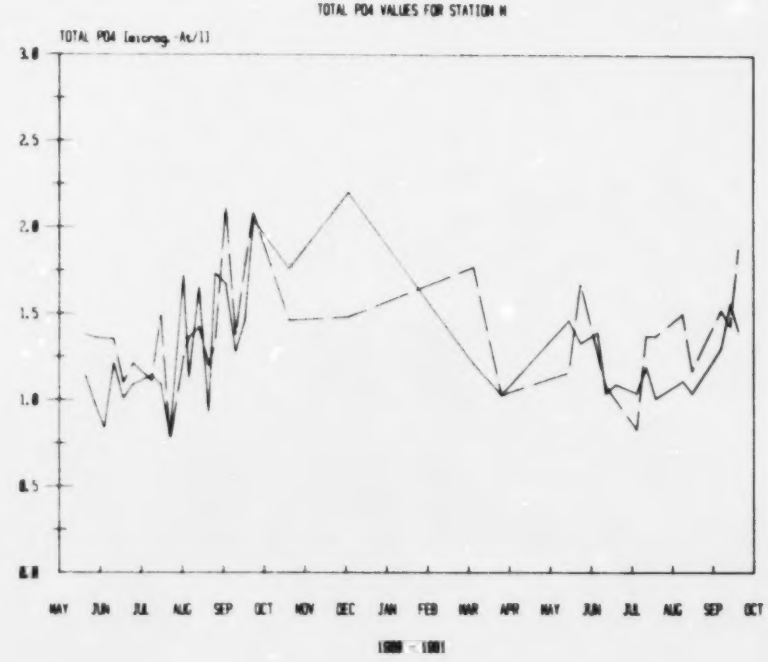
SURFACE

BOTTOM

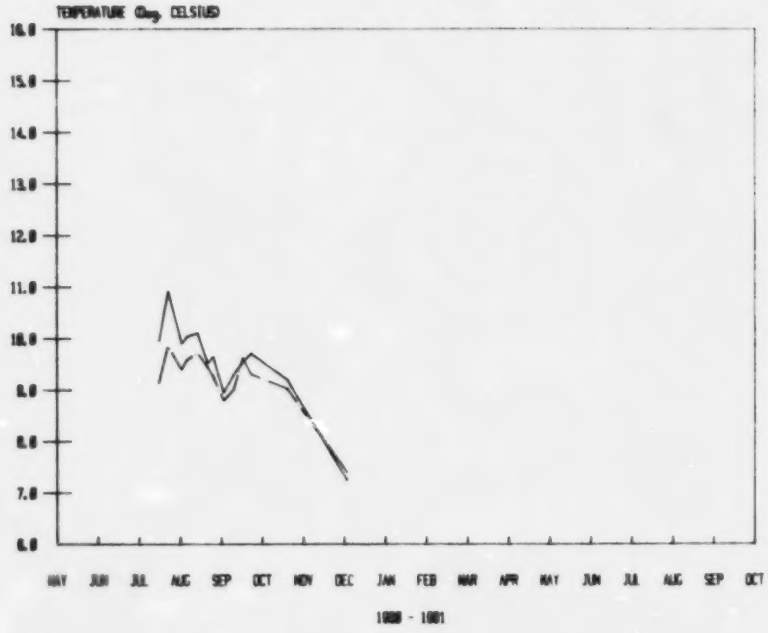
TOTAL N (as NO3, NO2) FOR STATION M



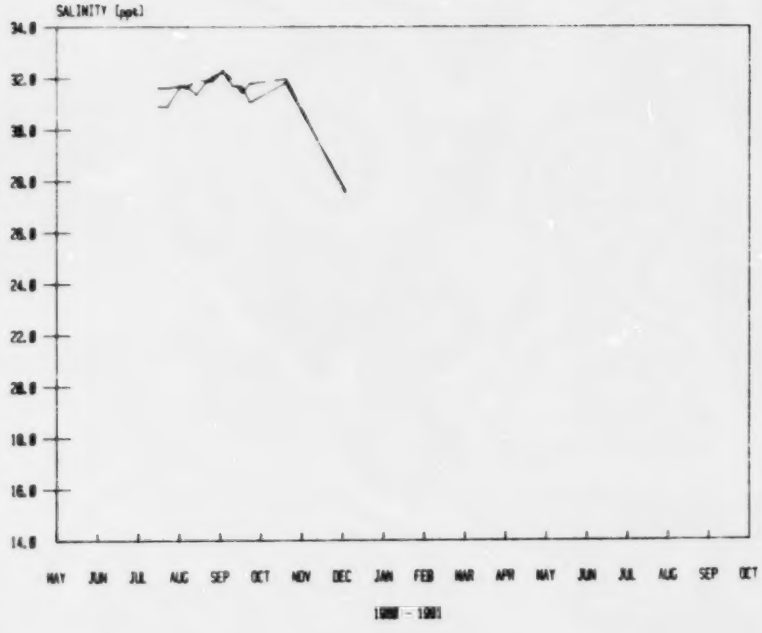
TOTAL PO4 VALUES FOR STATION M



TEMPERATURE VALUES FOR STATION 0



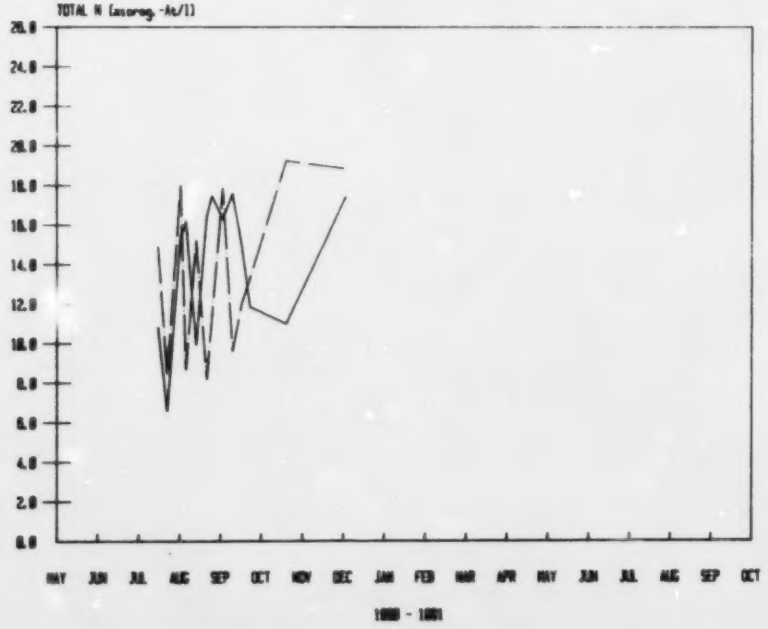
SALINITY VALUES FOR STATION 0



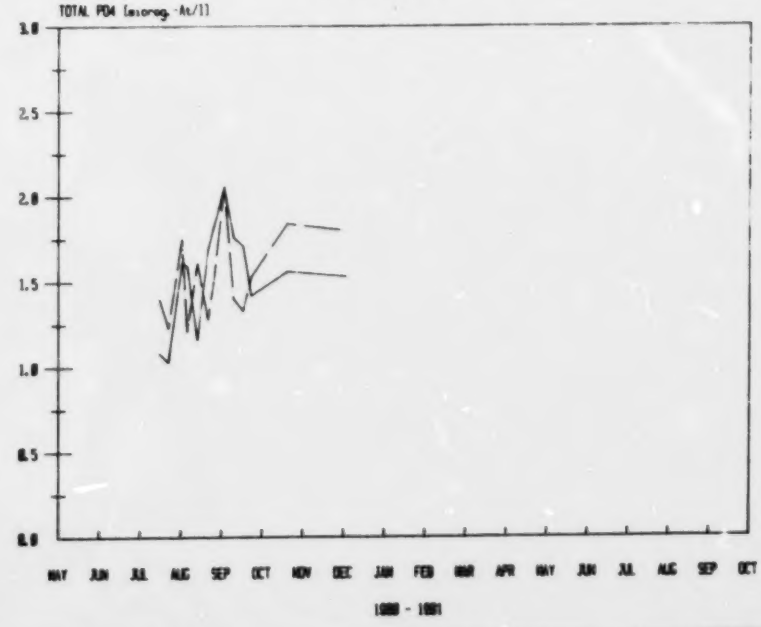
SURFACE

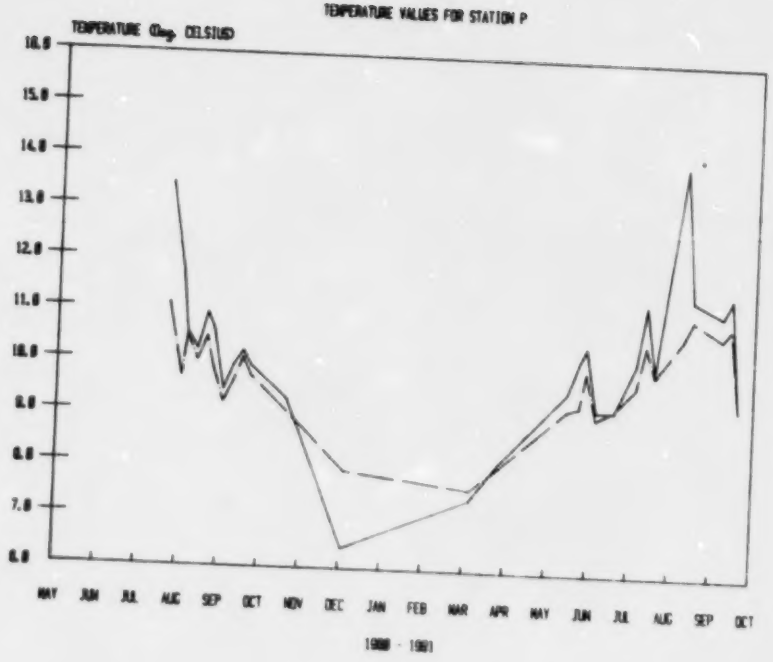
-2 metres

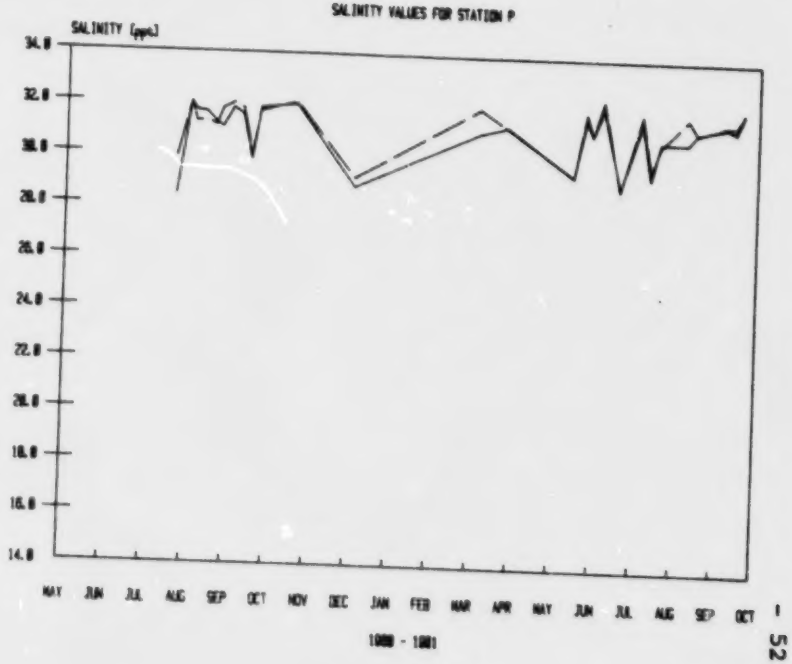
TOTAL N (as NO3, NO2) FOR STATION 0



TOTAL PO4 VALUES FOR STATION 0







SURFACE

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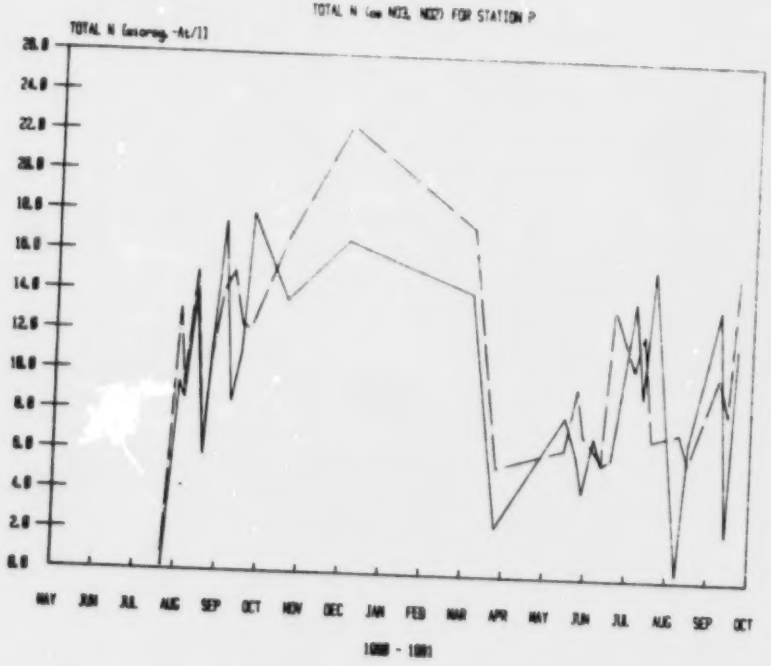
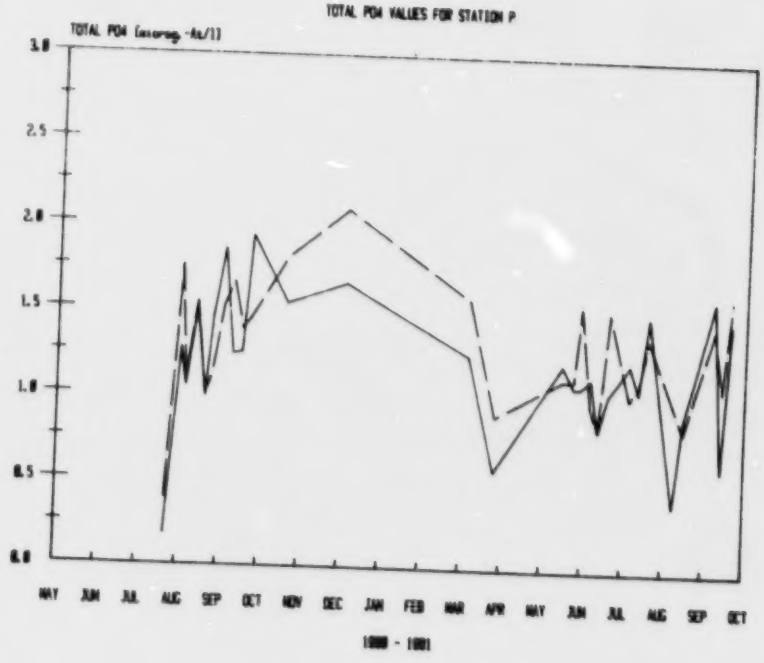
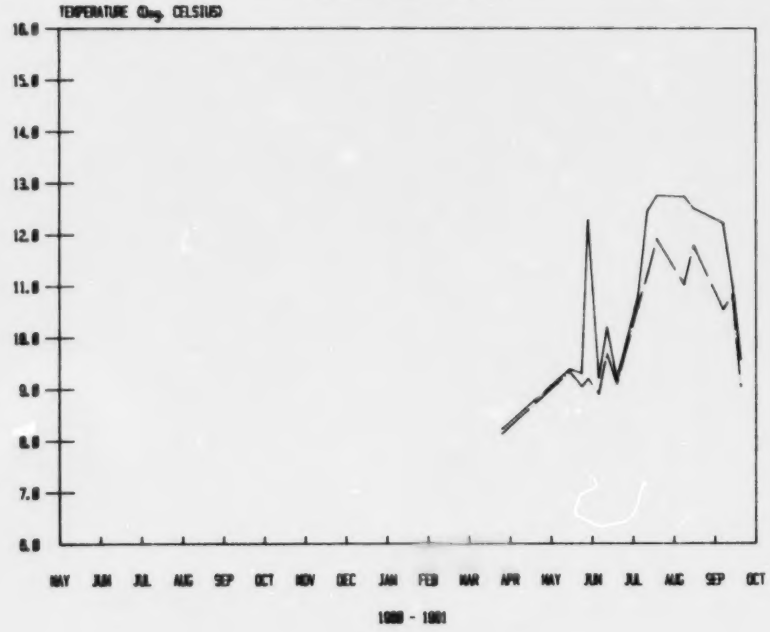
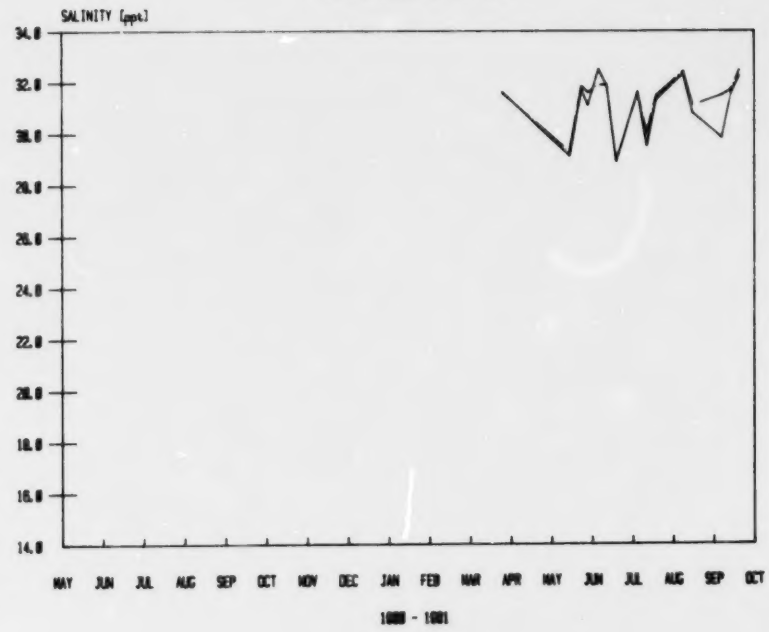




TEMPERATURE VALUES FOR STATION Q



SALINITY VALUES FOR STATION Q



SURFACE

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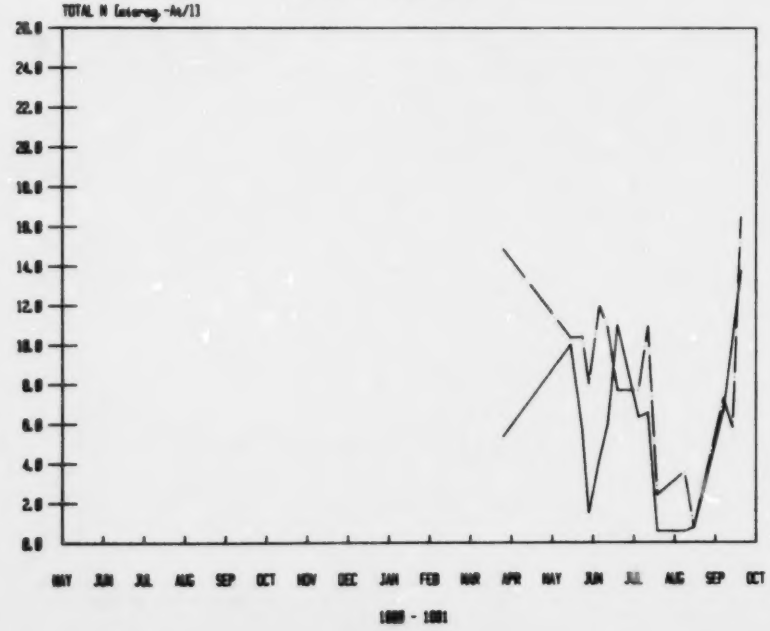
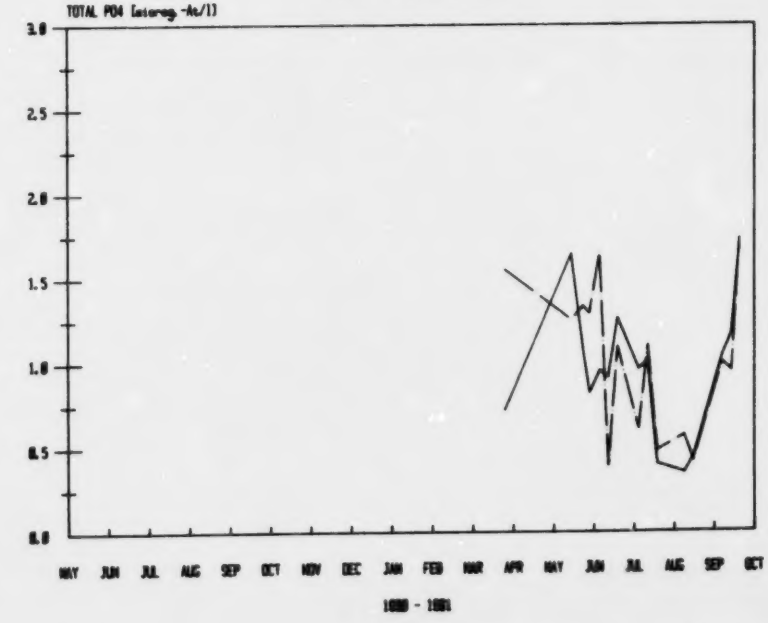
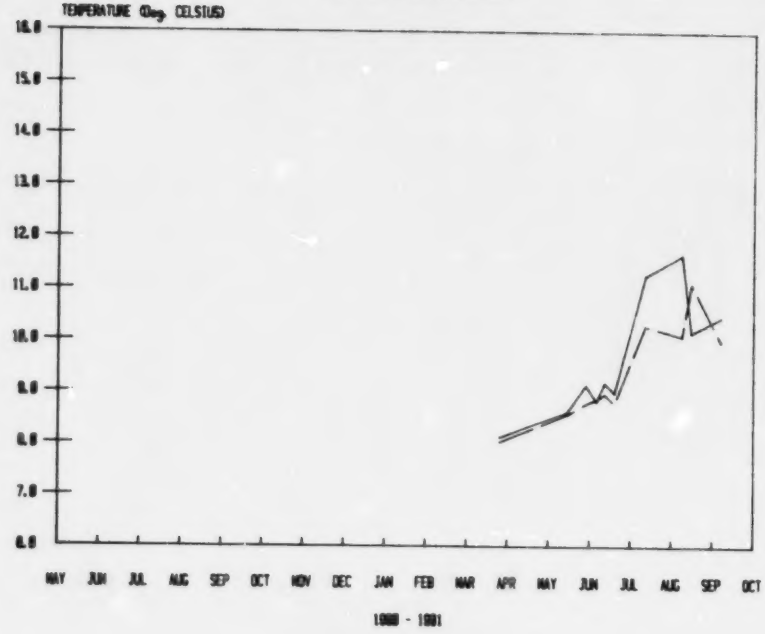
TOTAL N (as NO3, NO2) FOR STATION Q



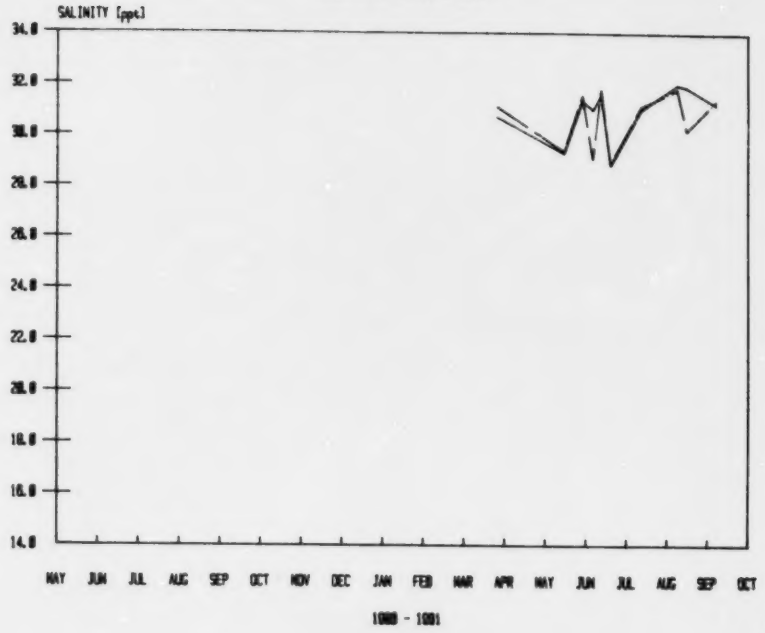
TOTAL PO4 VALUES FOR STATION Q



TEMPERATURE VALUES FOR STATION R



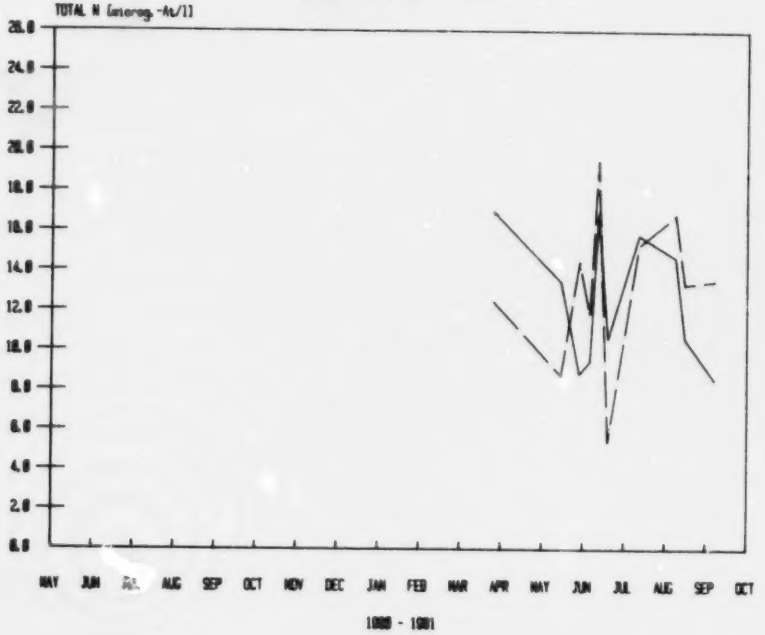
SALINITY VALUES FOR STATION R



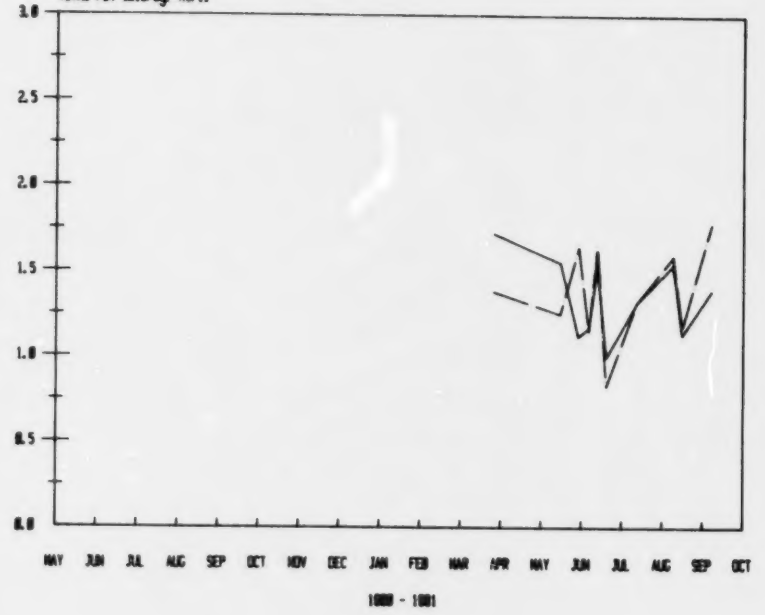
SURFACE

BOTTOM

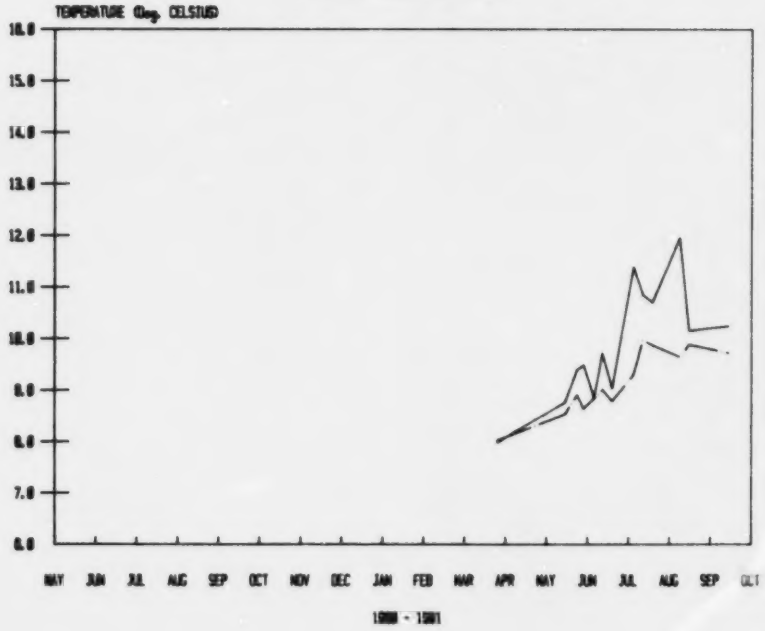
TOTAL N (as NO3, NO2) FOR STATION R



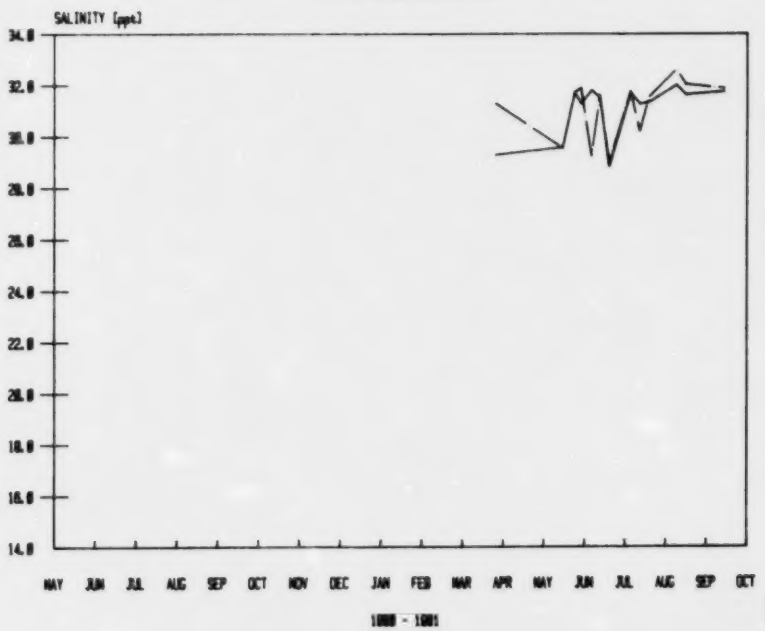
TOTAL PO4 VALUES FOR STATION R



TEMPERATURE VALUES FOR STATION 5



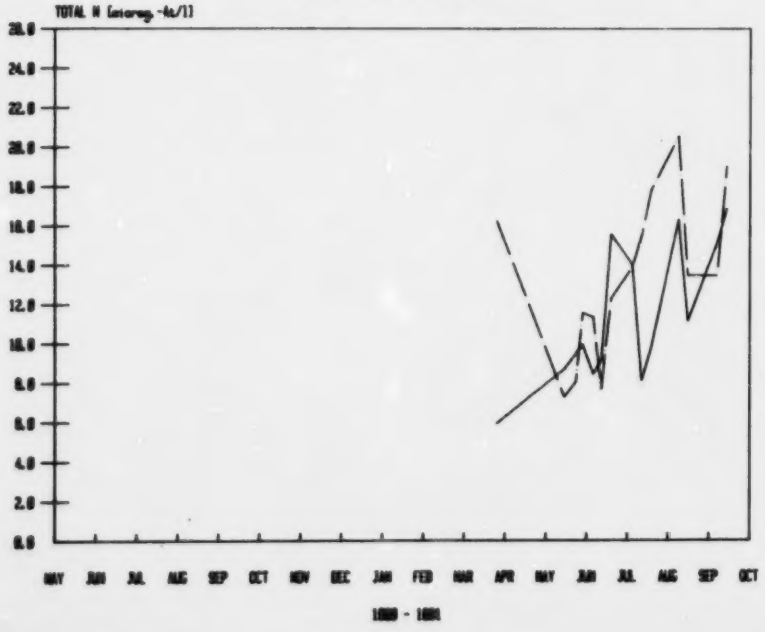
SALINITY VALUES FOR STATION 5



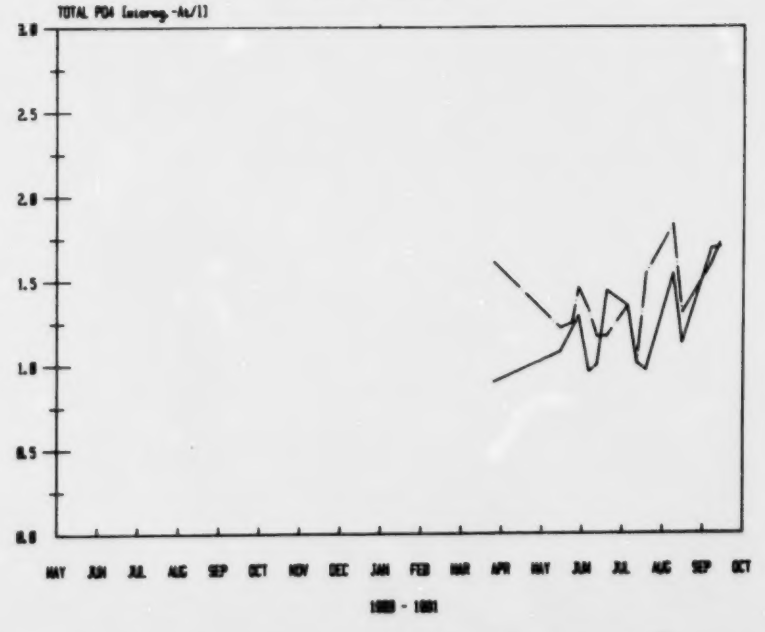
SURFACE

BOTTOM

TOTAL N (as NO3, NO2) FOR STATION 5



TOTAL PO4 VALUES FOR STATION 5



APPENDIX IV

Environmental data for Stations C, G, J and M collected on July 25, 1980 over an 8 hour period at approximately 2 hour intervals. Times are given as Pacific Standard Time.

TIDAL MONITORING DATA (JULY 25 1980) FOR STATION C

DAY& TIME	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
25 0720	.	0.00	.	14.68	29.01	0.11	0.11
25 0720	.	1.00	.	14.06	29.19	0.06	0.10
25 0720	.	2.00	.	13.86	29.30	0.06	0.08
25 0720	.	4.00	.	13.39	29.35	0.11	0.14
25 0720	5.80	4.80	2.20	11.86	30.82	0.06	0.10
25 0835	.	0.00	.	15.14	29.00	0.06	0.08
25 0835	.	1.00	.	14.13	29.08	0.03	0.08
25 0835	.	2.00	.	13.71	29.29	0.03	0.07
25 0835	.	4.00	.	12.41	30.29	0.11	0.21
25 0835	6.70	5.70	2.20	11.61	30.75	1.25	0.35
25 1000	.	0.00	.	15.28	29.04	0.11	0.11
25 1000	.	1.00	.	13.87	29.42	0.03	0.05
25 1000	.	2.00	.	13.30	29.62	0.03	0.04
25 1000	.	4.00	.	12.00	30.67	0.14	0.27
25 1000	7.70	6.70	2.20	10.52	31.34	3.57	0.59
25 1130	.	0.00	.	15.90	29.16	0.11	0.10
25 1130	.	1.00	.	14.56	29.22	0.06	0.10
25 1130	.	2.00	.	12.75	29.83	0.03	0.08
25 1130	.	4.00	.	11.58	30.75	0.66	0.34
25 1130	8.10	7.10	2.30	10.05	31.31	15.30	1.49
25 1250	.	0.00	.	15.76	28.86	0.13	0.15
25 1250	.	1.00	.	15.50	28.99	0.11	0.08
25 1250	.	2.00	.	14.52	29.23	0.11	0.14
25 1250	.	4.00	.	11.76	30.69	0.06	0.15
25 1250	8.00	7.00	2.40	10.06	31.49	11.38	1.22

TIDAL MONITORING DATA (JULY 25 1980) FOR STATION G

DAY& TIME	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
25 0645	.	0.00	.	15.16	29.11	0.16	0.28
25 0645	.	1.00	.	14.63	29.28	0.50	0.38
25 0645	.	2.00	.	12.64	30.03	.	.
25 0645	3.10	2.10	2.50	12.30	30.24	1.11	0.46
25 0820	.	0.00	.	15.25	29.10	0.06	0.15
25 0820	.	1.00	.	14.26	29.48	0.28	0.38
25 0820	.	2.00	.	12.12	30.45	0.25	0.27
25 0820	4.10	3.10	2.30	11.56	30.73	0.94	0.44
25 0945	.	0.00	.	15.05	28.91	0.13	0.29
25 0945	.	1.00	.	15.13	28.96	0.13	0.39
25 0945	.	2.00	.	13.11	29.90	0.19	0.40
25 0945	4.90	3.90	2.20	10.72	30.99	7.20	0.95
25 1115	.	0.00	.	15.10	28.76	0.13	0.23
25 1115	.	1.00	.	14.41	28.84	0.13	0.20
25 1115	.	2.00	.	14.20	29.14	0.06	0.15
25 1115	.	4.00	.	11.39	30.66	1.00	0.46
25 1115	5.50	4.50	2.60	10.01	31.41	2.19	0.51
25 1230	.	0.00	.	15.04	28.80	0.13	0.21
25 1230	.	1.00	.	14.61	28.98	0.08	0.18
25 1230	.	2.00	.	14.35	29.15	0.08	0.14
25 1230	.	4.00	.	12.01	30.39	0.11	0.24
25 1230	5.60	4.60	2.40	10.21	31.35	0.55	0.47

TIDAL MONITORING DATA (JULY 25 1980) FOR STATION J

DAY& TIME	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
25 0630	.	0.00	.	13.84	29.25	0.13	0.21
25 0630	4.70	3.70	2.20	11.92	30.52	0.13	0.27
25 0810	.	0.00	.	13.86	29.51	0.78	0.30
25 0810	5.50	4.50	2.30	11.68	30.54	0.13	0.18
25 0930	.	0.00	.	13.70	29.44	0.08	0.11
25 0930	5.20	4.20	2.30	11.22	30.68	0.80	0.38
25 1105	.	0.00	.	14.26	29.49	0.13	0.11
25 1105	7.10	6.10	2.10	10.82	30.92	6.40	0.84
25 1215	.	0.00	.	14.28	29.54	0.16	0.12
25 1215	7.30	6.30	2.00	10.36	31.22	5.04	0.68

TIDAL MONITORING DATA (JULY 25 1980) FOR STATION M

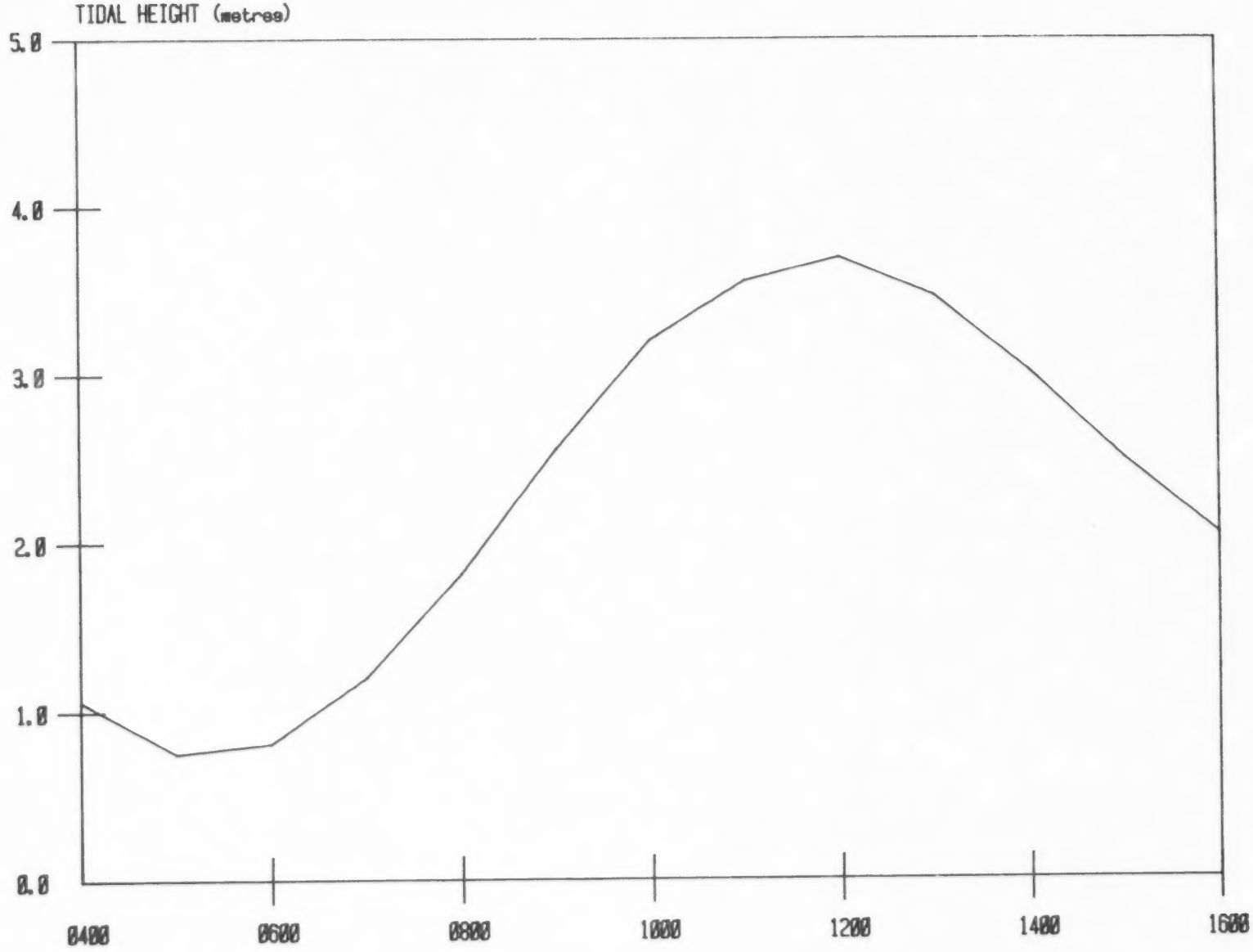
DAY& TIME	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
25 0605	.	0.00	.	11.72	30.25	0.69	0.39
25 0605	1.00	1.00	1.00	11.68	30.33	.	.
25 0750	.	0.00	.	11.80	30.17	1.08	0.43
25 0750	2.00	1.00	2.00	10.50	30.92	2.11	0.58
25 0910	.	0.00	.	11.73	30.46	1.97	0.49
25 0910	2.70	1.70	2.70	10.04	31.30	9.58	1.10
25 1035	.	0.00	.	11.60	30.83	6.37	1.00
25 1035	3.50	2.50	3.50	10.26	31.10	9.03	1.18
25 1200	.	0.00	.	11.93	30.77	3.96	0.67
25 1200	3.00	2.00	3.00	10.99	30.94	2.35	0.50

APPENDIX V

Time series graphs of tidal height, temperature, salinity, combined nitrite-nitrate nitrogen and ortho-phosphate at Stations C, G, J and M for July 25, 1980. Times are given as Pacific Standard Time. Tidal data are actual records supplied by the Department of Fisheries and Oceans.

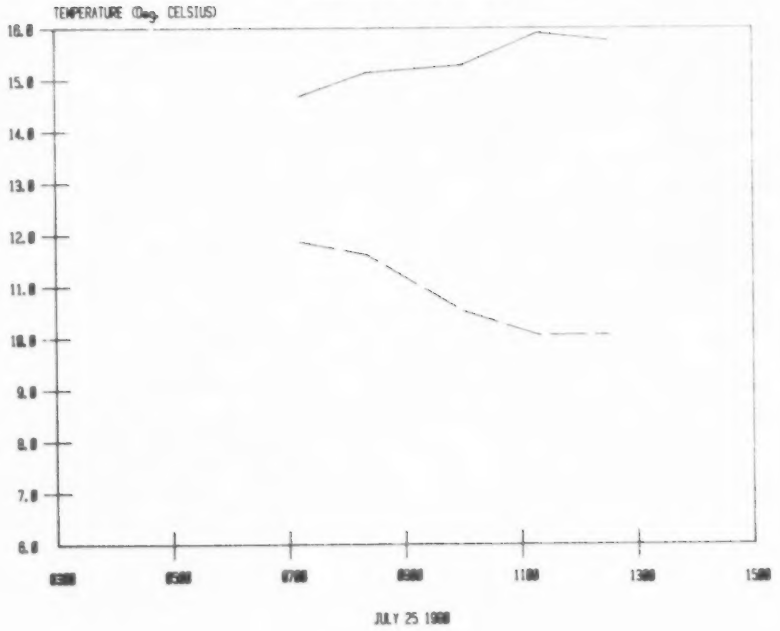
8 HOUR TIDAL CYCLE MONITORING DATA

RECORDED TIDE MEASUREMENTS FOR THE AREA



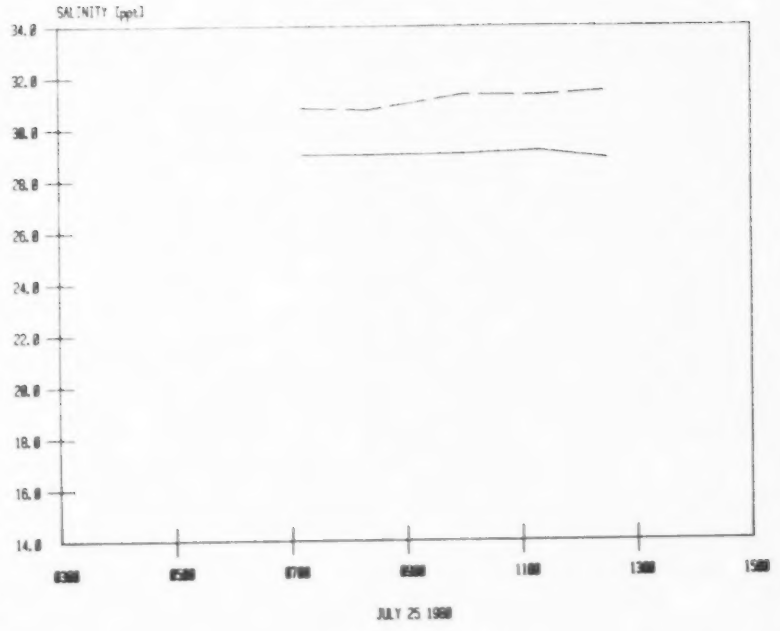
JULY 25 1980

TEMPERATURE VALUES FOR STATION C



JULY 25 1980

SALINITY VALUES FOR STATION C

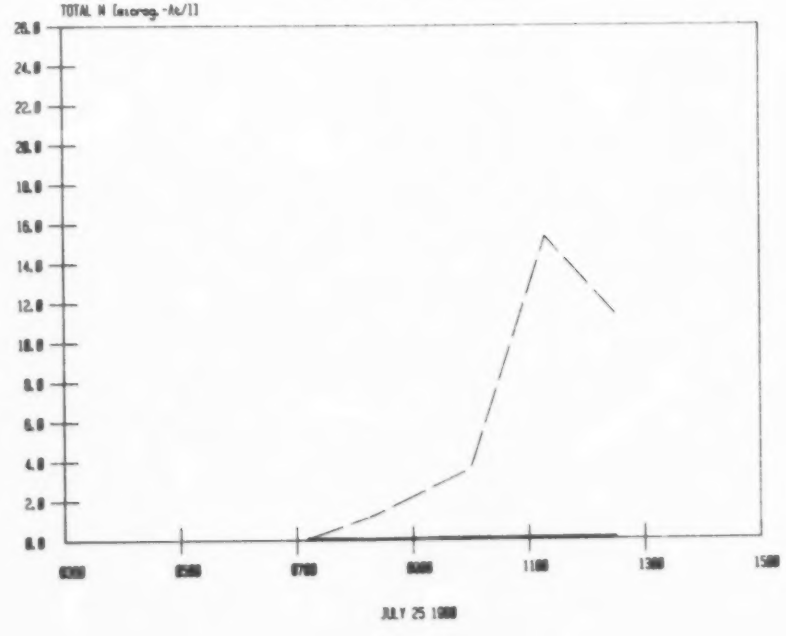


JULY 25 1980

SURFACE

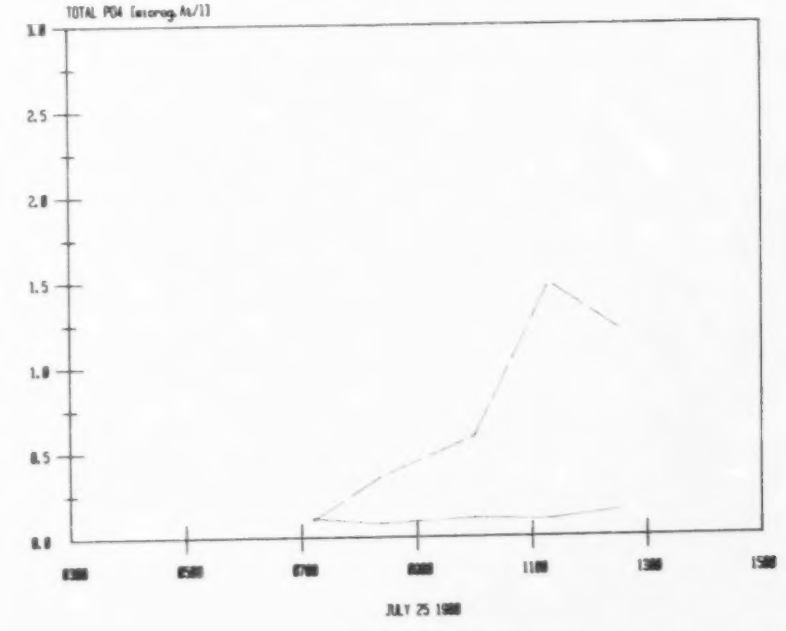
BOTTOM

TOTAL N (as NO3,NO2) FOR STATION C



JULY 25 1980

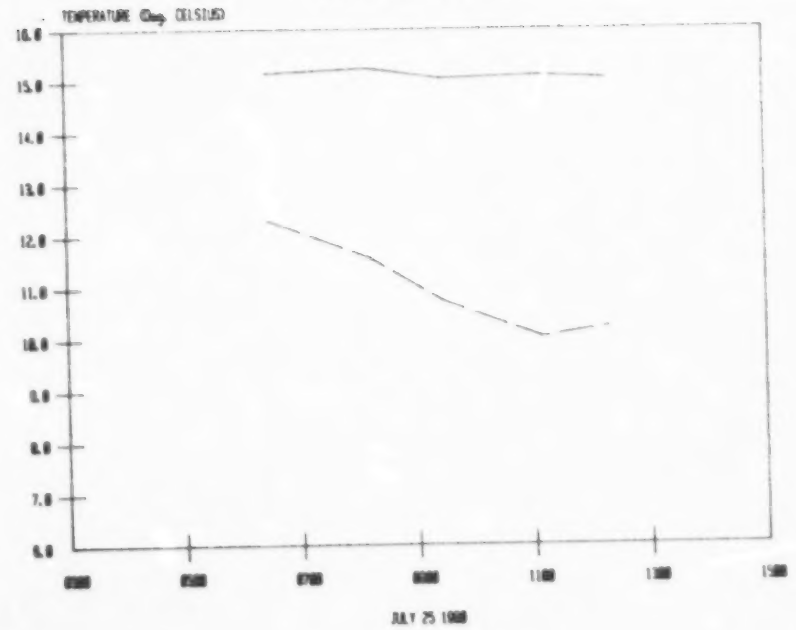
TOTAL PO4 VALUES FOR STATION C



JULY 25 1980

C1

TEMPERATURE VALUES FOR STATION C



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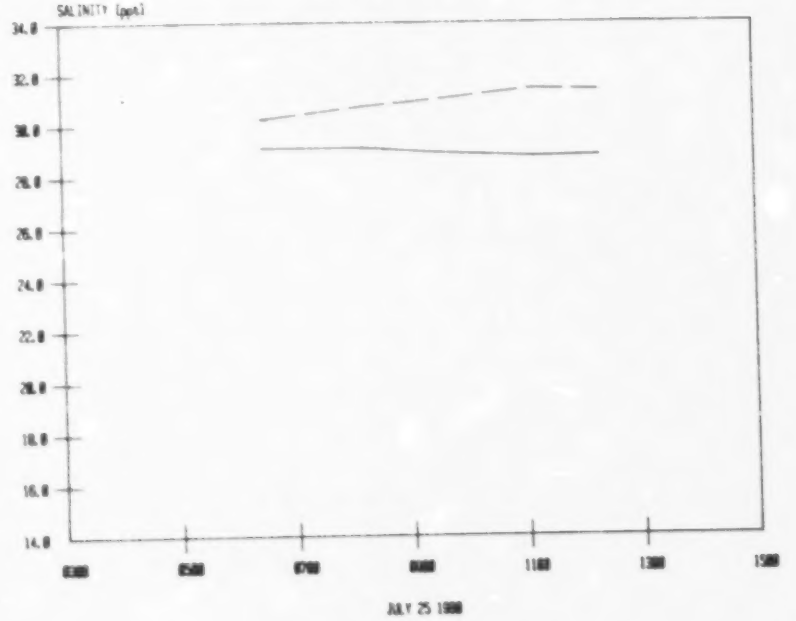
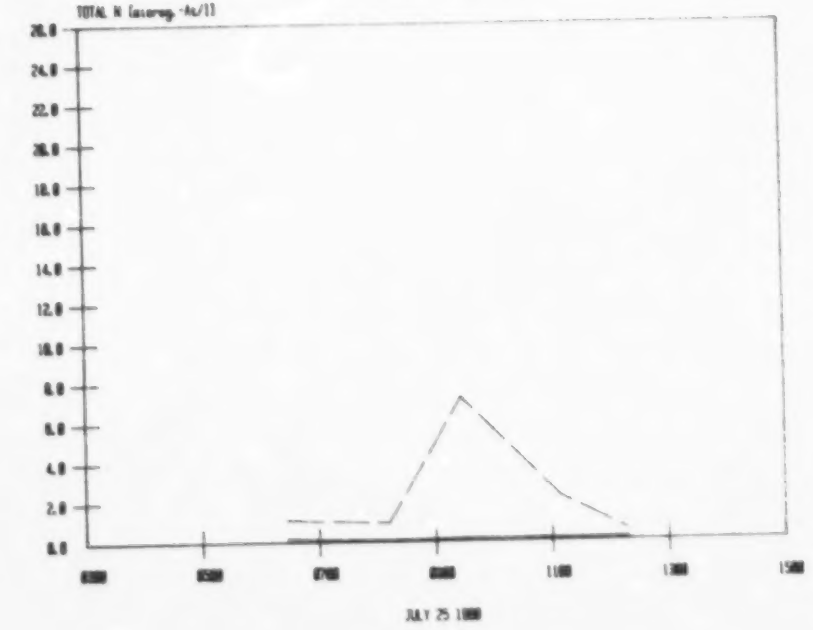


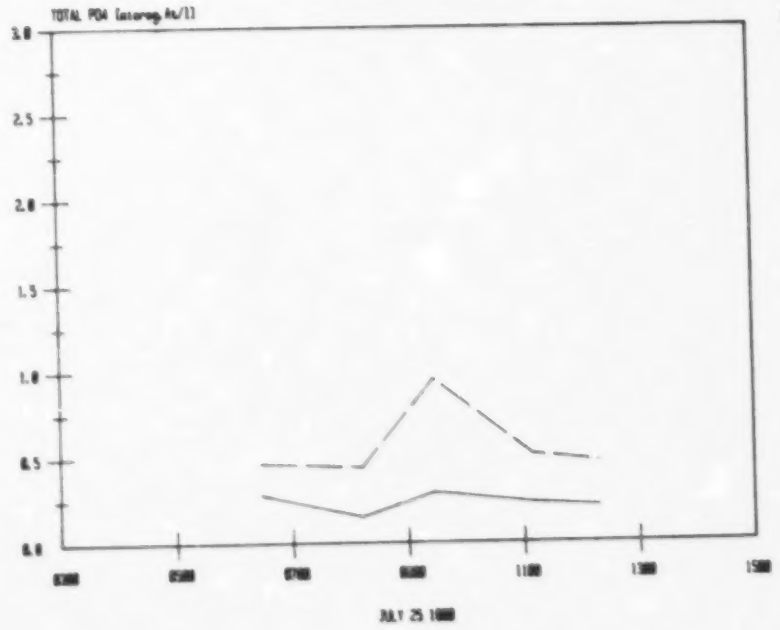
SURFACE

BOTTOM

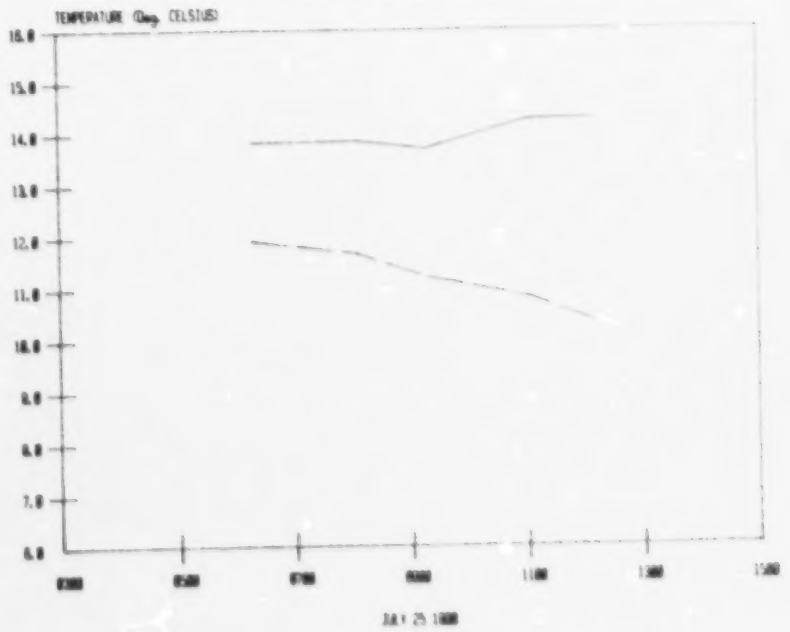
TOTAL N (as NO3,NO2) FOR STATION C



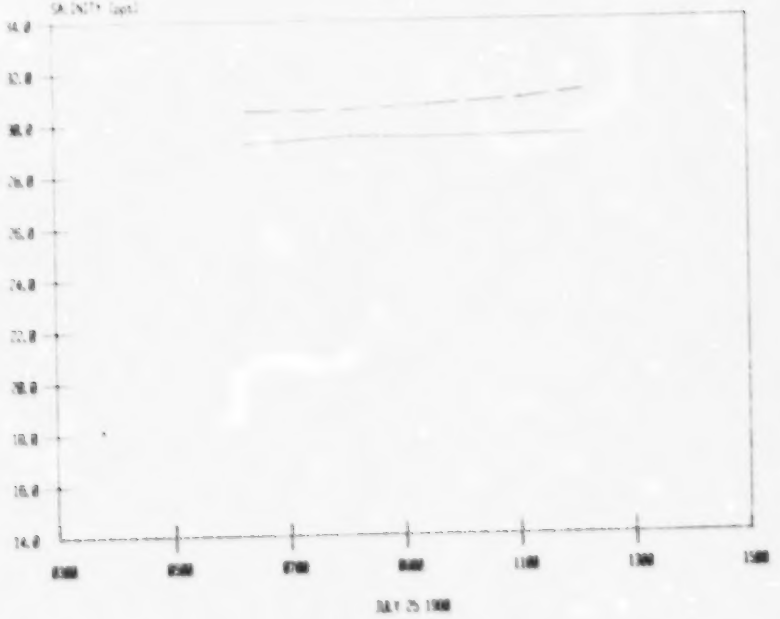
TOTAL PO4 VALUES FOR STATION C



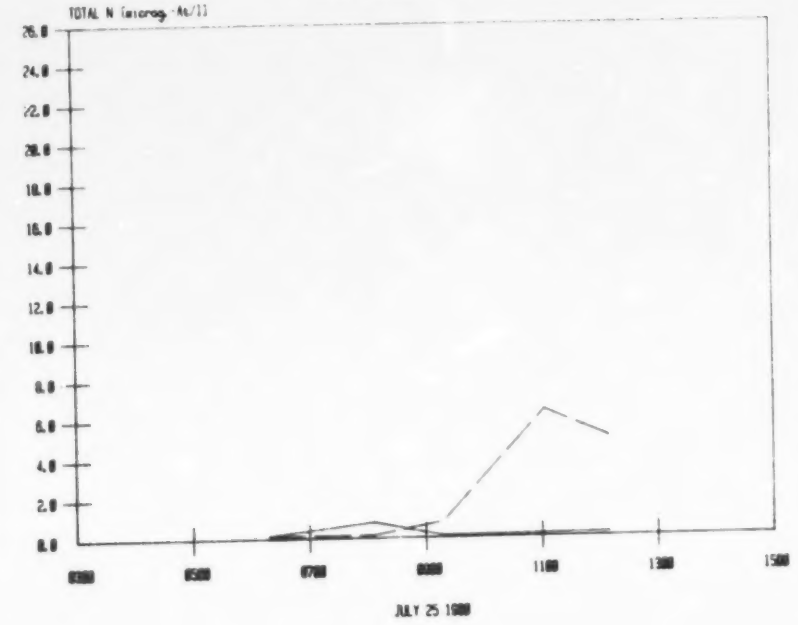
TEMPERATURE VALUES FOR STATION 1



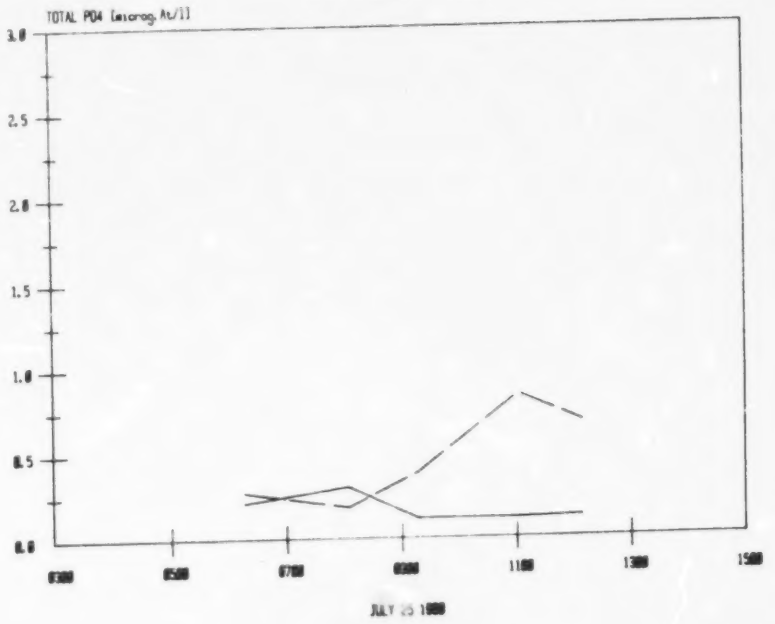
SALINITY VALUES FOR STATION 1



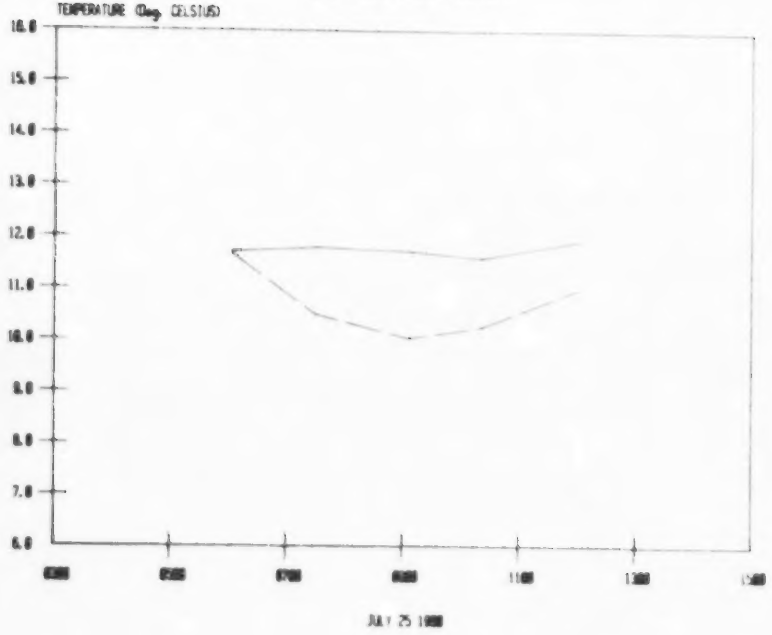
TOTAL N (micrograms-At/l) FOR STATION 1



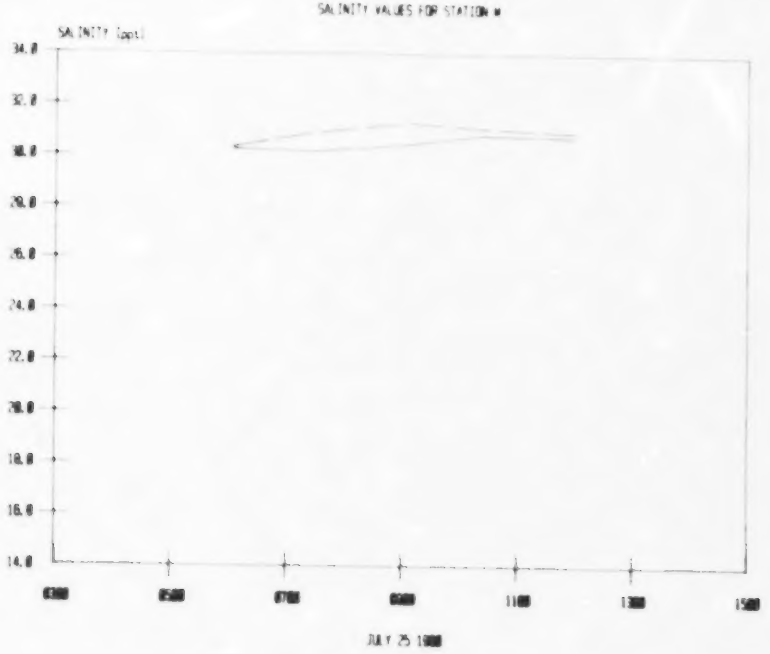
TOTAL PO4 VALUES FOR STATION 1



TEMPERATURE VALUES FOR STATION M



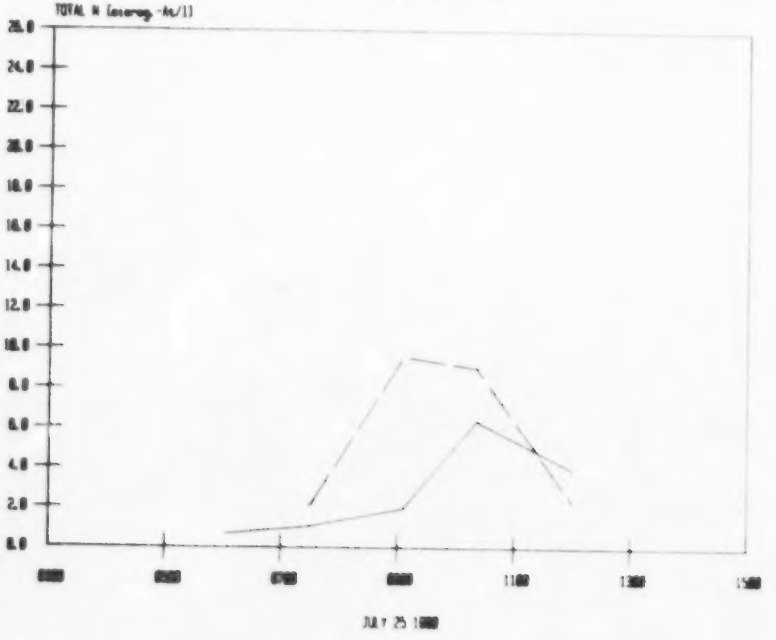
SALINITY VALUES FOR STATION M



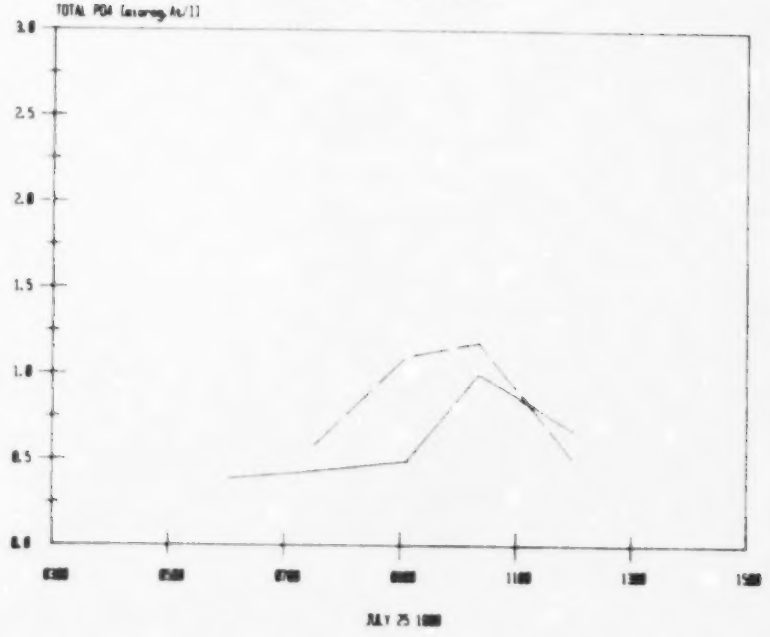
SURFACE

BOTTOM

TOTAL N (as NO3, NO2) FOR STATION M



TOTAL PO4 VALUES FOR STATION M



APPENDIX VI

Environmental data for Stations C, G, J and M collected on August 21-22, 1980 over a 20 hour period at approximately 2 hour intervals. Times are given as Pacific Standard Time.

TIDAL MONITORING DATA (AUGUST 21-22 1980) FOR STATION C

DAY& TIME	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
21 1455	.	0.00	.	12.58	31.50	0.59	0.46
21 1455	.	1.00	.	12.68	31.53	0.25	0.38
21 1455	.	2.00	.	12.51	31.53	0.13	0.27
21 1455	.	4.00	.	11.52	31.57	0.84	0.38
21 1455	7.00	6.00	3.70	10.91	31.57	1.68	0.61
21 1800	.	0.00	.	12.69	31.55	0.00	0.38
21 1800	.	1.00	.	12.63	31.64	0.00	0.42
21 1800	.	2.00	.	12.68	31.62	0.00	0.37
21 1800	.	4.00	.	11.51	31.55	0.08	0.38
21 1800	7.60	6.60	2.40	10.75	31.62	1.68	0.65
21 1935	.	0.00	.	12.54	31.65	0.00	0.38
21 1935	.	1.00	.	12.51	31.67	0.00	0.27
21 1935	.	2.00	.	12.46	31.68	0.00	0.31
21 1935	.	4.00	.	11.33	31.66	1.05	0.50
21 1935	8.40	7.40	2.70	10.82	31.70	4.19	1.03
21 2115	.	0.00	.	12.62	31.75	0.08	0.23
21 2115	.	1.00	.	12.70	31.65	1.13	0.92
21 2115	.	2.00	.	11.61	31.70	0.63	0.42
21 2115	.	4.00	.	11.13	31.71	2.10	0.57
21 2115	9.40	8.40	.	10.76	31.79	4.44	0.90
22 0005	.	0.00	.	12.80	31.87	0.11	0.38
22 0005	.	1.00	.	12.75	32.00	0.13	0.54
22 0005	.	2.00	.	11.09	31.83	2.30	0.67
22 0005	.	4.00	.	10.90	31.83	4.82	0.83
22 0005	7.40	6.40	.	10.85	31.84	5.25	0.83
22 0230	.	0.00	.	12.42	31.69	0.21	0.41
22 0230	.	1.00	.	12.33	31.77	0.44	0.39
22 0230	.	2.00	.	11.38	31.73	3.02	0.77
22 0230	.	4.00	.	11.12	31.75	4.61	0.92
22 0230	5.90	4.90	.	10.92	31.60	5.37	1.21
22 0445	.	0.00	.	12.17	31.77	0.08	0.38
22 0445	.	1.00	.	12.19	31.77	0.37	0.32
22 0445	.	2.00	.	11.22	31.70	0.85	0.47
22 0445	.	4.00	.	11.05	31.64	.	.
22 0445	5.50	4.50	.	10.98	31.49	3.15	0.69
22 0630	.	0.00	.	11.99	31.75	0.24	0.34
22 0630	.	1.00	.	12.00	31.88	0.04	0.44
22 0630	.	2.00	.	11.09	31.80	1.67	0.44
22 0630	.	4.00	.	10.93	31.77	3.22	0.62
22 0630	6.20	5.20	3.40	10.84	31.79	4.44	1.07
22 0830	.	0.00	.	11.71	31.64	0.81	0.35
22 0830	.	1.00	.	11.75	31.70	1.30	0.48
22 0830	.	2.00	.	11.28	31.76	0.74	0.33
22 0830	.	4.00	.	11.11	31.71	4.63	0.76
22 0830	7.40	6.40	3.30	10.82	31.70	4.07	0.64
22 1020	.	0.00	.	11.20	31.80	0.81	0.30
22 1020	.	1.00	.	11.12	31.66	1.63	0.36
22 1020	.	2.00	.	11.00	31.66	2.15	0.41
22 1020	.	4.00	.	10.90	31.76	3.15	0.48
22 1020	8.00	7.00	3.50	10.69	31.76	4.51	0.76

TIDAL MONITORING DATA (AUGUST 21-22 1980) FOR STATION G

DAY/ TIME	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
21 1530	.	0.00	.	13.45	31.54	0.71	0.61
21 1530	.	1.00	.	13.32	31.56	1.30	0.98
21 1530	.	2.00	.	12.97	31.57	0.84	0.65
21 1530	4.30	3.30	4.30	11.31	31.58	1.34	0.73
21 1810	.	0.00	.	13.15	31.79	0.92	0.71
21 1810	.	1.00	.	13.20	31.75	1.22	0.73
21 1810	.	2.00	.	12.00	31.63	1.84	0.88
21 1810	.	4.00	.	11.42	31.60	.	.
21 1810	5.20	4.20	3.00	11.22	31.66	2.22	0.73
21 2000	.	0.00	.	12.98	31.73	0.50	0.65
21 2000	.	1.00	.	12.95	31.69	0.81	0.59
21 2000	.	2.00	.	12.31	31.50	.	.
21 2000	.	4.00	.	10.99	31.69	3.65	0.84
21 2000	6.10	5.10	.	10.85	31.61	5.74	1.11
21 2145	.	0.00	.	12.91	31.82	1.55	0.83
21 2145	.	1.00	.	12.81	31.85	1.89	0.84
21 2145	.	2.00	.	12.25	31.72	0.84	0.31
21 2145	.	4.00	.	10.83	31.74	4.40	0.92
21 2145	6.00	5.00	.	10.63	31.62	3.22	0.66
22 0035	.	0.00	.	12.12	31.84	0.92	0.72
22 0035	.	1.00	.	12.25	31.91	0.71	0.70
22 0035	.	2.00	.	12.07	31.96	1.11	0.59
22 0035	4.70	3.70	.	10.77	32.00	5.00	0.86
22 0255	.	0.00	.	11.69	31.17	1.26	0.95
22 0255	.	1.00	.	11.86	31.78	0.67	0.54
22 0255	.	2.00	.	11.95	31.87	.	.
22 0255	3.40	2.40	.	11.39	31.83	0.63	0.61
22 0510	.	0.00	.	11.79	31.73	0.74	0.55
22 0510	.	1.00	.	11.92	31.66	0.63	0.69
22 0510	.	2.00	.	11.95	31.70	.	.
22 0510	3.30	2.30	3.00	11.54	31.70	2.22	0.97
22 0655	.	0.00	.	11.77	31.80	1.11	0.71
22 0655	.	1.00	.	11.83	31.81	0.92	0.77
22 0655	.	2.00	.	11.29	31.83	0.84	0.61
22 0655	4.20	3.20	3.80	11.02	31.71	5.25	1.00
22 0850	.	0.00	.	11.80	31.71	1.55	0.69
22 0850	.	1.00	.	11.68	31.72	1.55	0.62
22 0850	.	2.00	.	11.27	31.74	2.78	0.62
22 0850	.	4.00	.	11.06	31.66	.	.
22 0850	5.20	4.20	3.70	11.04	31.70	3.89	0.78
22 1035	.	0.00	.	11.56	31.62	1.30	0.45
22 1035	.	1.00	.	11.50	31.63	2.41	0.72
22 1035	.	2.00	.	11.20	31.65	2.04	0.54
22 1035	.	4.00	.	11.01	31.66	2.96	0.62
22 1035	5.70	4.70	3.40	10.87	31.66	2.59	0.59

TIDAL MONITORING DATA (AUGUST 21-22 1980) FOR STATION J

DAY& TIME	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
21 1550	.	0.00	.	11.37	31.60	5.45	0.99
21 1550	5.80	4.80	4.30	10.80	31.64	6.03	1.16
21 1830	.	0.00	.	11.60	31.50	2.30	0.64
21 1830	7.00	6.00	3.40	10.82	31.50	2.10	0.77
21 2015	.	0.00	.	11.63	31.87	1.13	0.61
21 2015	7.60	6.60	.	10.95	31.71	2.72	0.80
21 2210	.	0.00	.	11.59	31.77	2.10	0.73
21 2210	7.40	6.40	.	11.20	31.75	4.82	0.99
22 0055	.	0.00	.	11.23	31.62	2.96	0.55
22 0055	6.00	5.00	.	10.31	31.87	5.87	1.07
22 0320	.	0.00	.	10.98	31.59	4.82	0.69
22 0320	4.70	3.70	.	10.25	31.90	6.29	0.97
22 0530	.	0.00	.	10.89	29.85	6.08	1.15
22 0530	5.50	4.00	4.40	10.24	31.88	10.55	1.31
22 0710	.	0.00	.	10.81	31.75	4.81	0.90
22 0710	5.80	4.80	3.80	10.31	31.83	7.92	1.14
22 0905	.	0.00	.	11.04	31.46	4.14	0.79
22 0905	5.80	4.80	4.00	10.80	31.78	6.73	1.17
22 1055	.	0.00	.	10.93	31.71	3.38	0.68
22 1055	7.10	6.10	4.20	10.45	31.80	4.14	0.66

TIDAL MONITORING DATA (AUGUST 21-22 1980) FOR STATION M

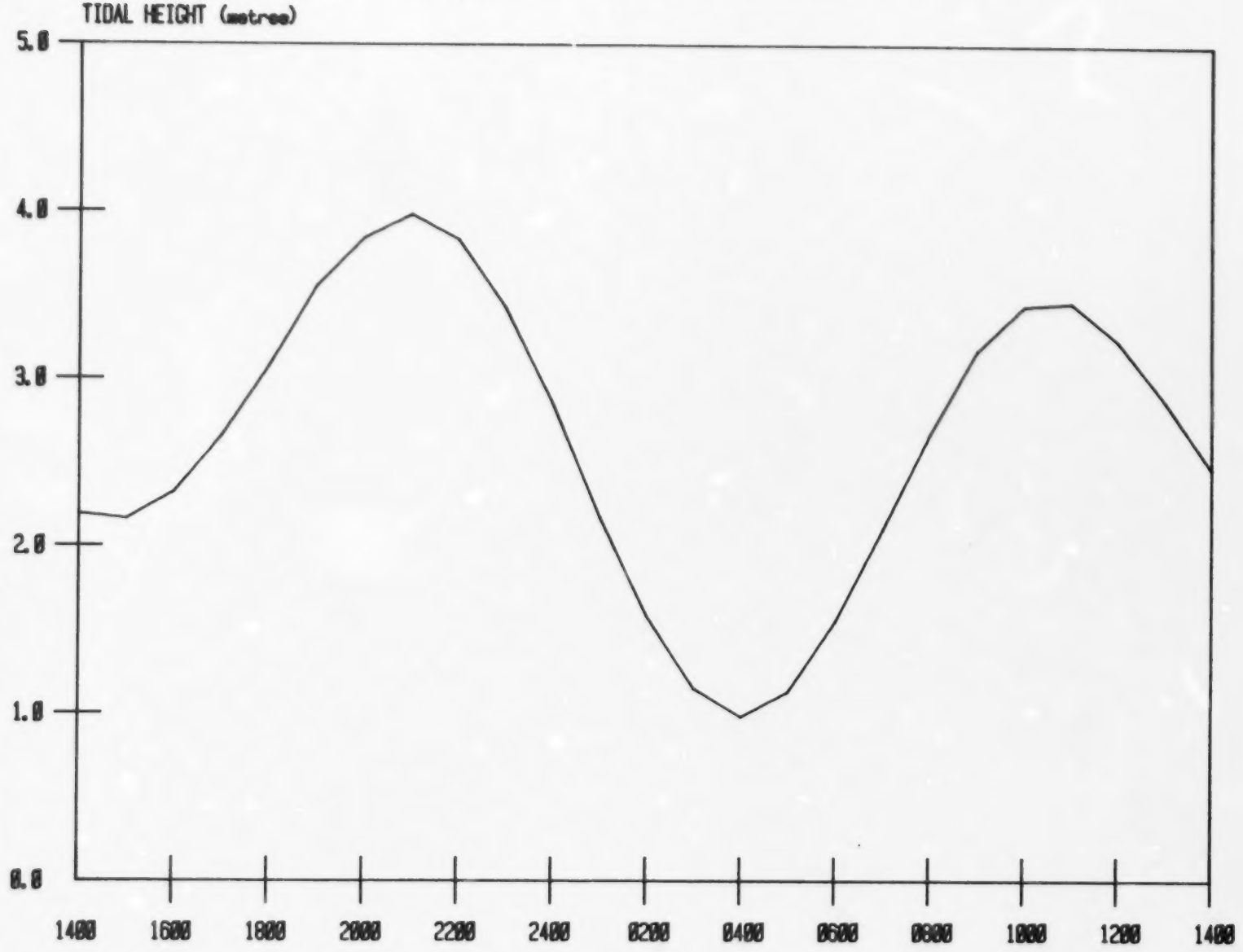
DAY& TIME	BOTTOM DEPTH (M)	SAMPLE DEPTH (M)	SECCHI DEPTH (M)	TEMP (CELSIUS)	SALINITY (PPT)	TOTAL N (NO3+NO2) UG-AT/L	TOTAL PO4 UG-AT/L
21 1400	.	0.00	.	11.39	31.50	9.54	1.19
21 1400	2.20	1.20	2.20	10.93	31.50	6.12	0.99
21 1615	.	0.00	.	11.11	31.61	10.06	1.42
21 1615	2.20	1.20	2.20	10.67	31.69	10.31	1.57
21 1845	.	0.00	.	10.80	31.68	5.11	1.07
21 1845	3.60	2.60	3.60	10.76	31.68	9.51	1.42
21 2035	.	0.00	.	10.67	31.83	9.72	1.45
21 2035	4.00	3.00	.	10.39	31.89	8.38	1.15
22 0550	.	0.00	.	9.64	31.89	8.36	1.11
22 0550	1.60	0.60	1.60	9.78	31.93	7.33	1.35
22 0730	.	0.00	.	9.94	31.39	10.73	1.24
22 0730	2.60	1.60	2.60	9.84	31.94	8.21	1.14
22 0920	.	0.00	.	9.88	32.07	12.21	1.53
22 0920	3.30	2.30	3.30	9.84	31.98	7.22	1.14
22 1110	.	0.00	.	10.19	31.92	12.43	1.55
22 1110	3.50	2.50	3.50	10.00	31.90	8.36	1.29

APPENDIX VII

Time series graphs of tidal height, temperature, salinity, combined nitrite-nitrate nitrogen and orth-phosphate at Stations C, G, J and M for August 21-22, 1980. Times are given as Pacific Standard Time. Tidal data are actual records supplied by the Department of Fisheries and Oceans.

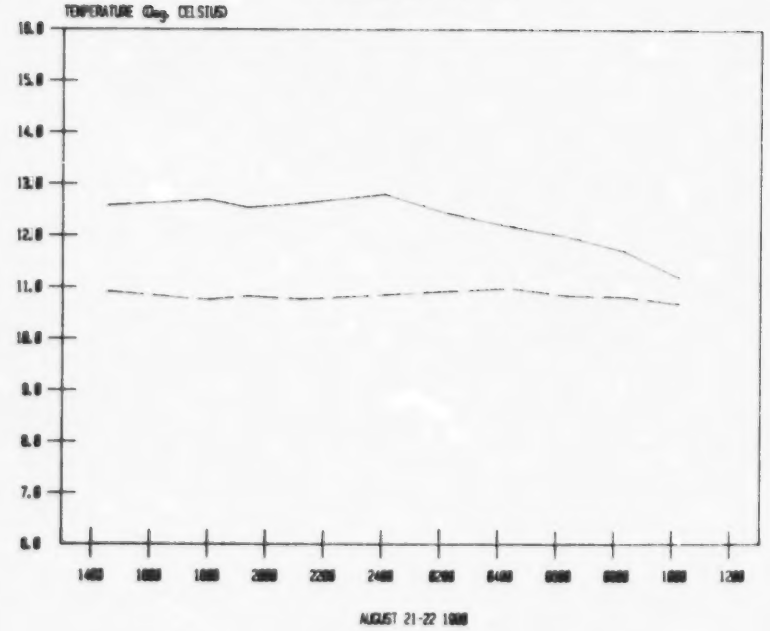
24 HOUR TIDAL CYCLE MONITORING DATA

RECORDED TIDE MEASUREMENTS FOR THE AREA

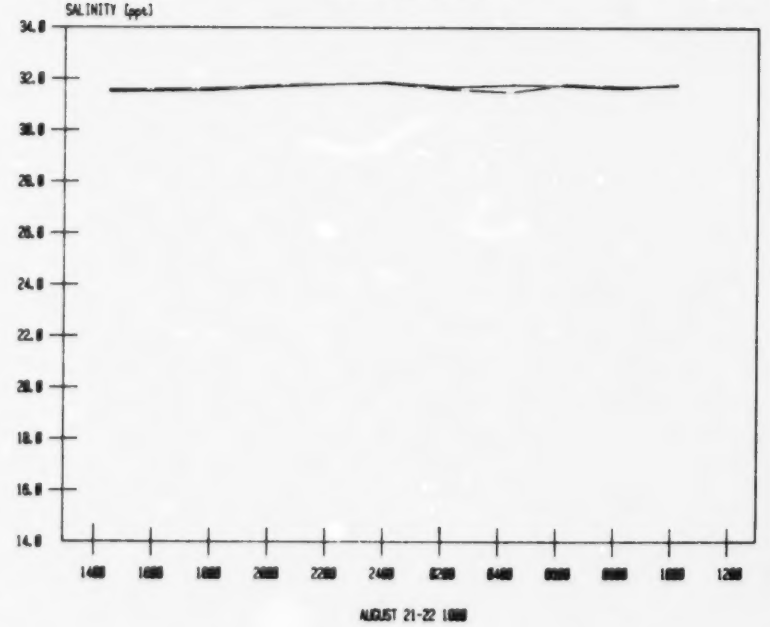


AUGUST 21-22 1990

TEMPERATURE VALUES FOR STATION C



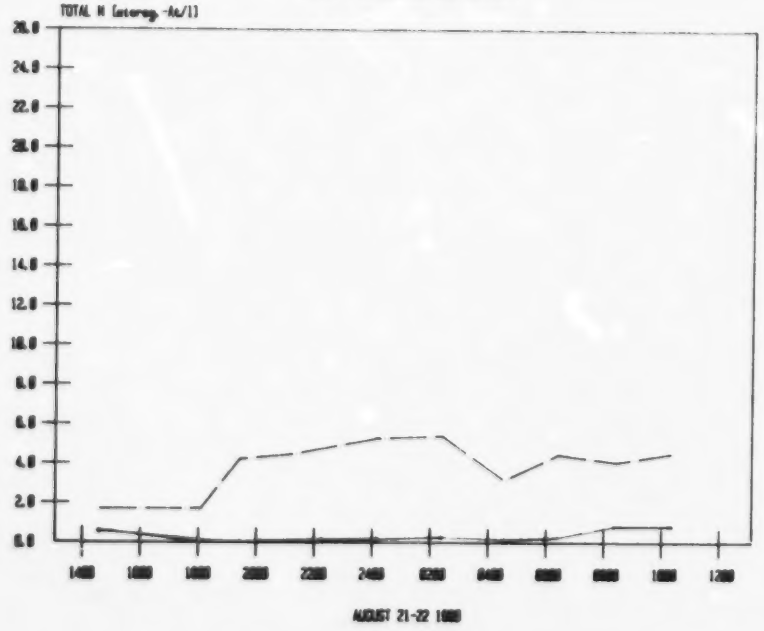
SALINITY VALUES FOR STATION C



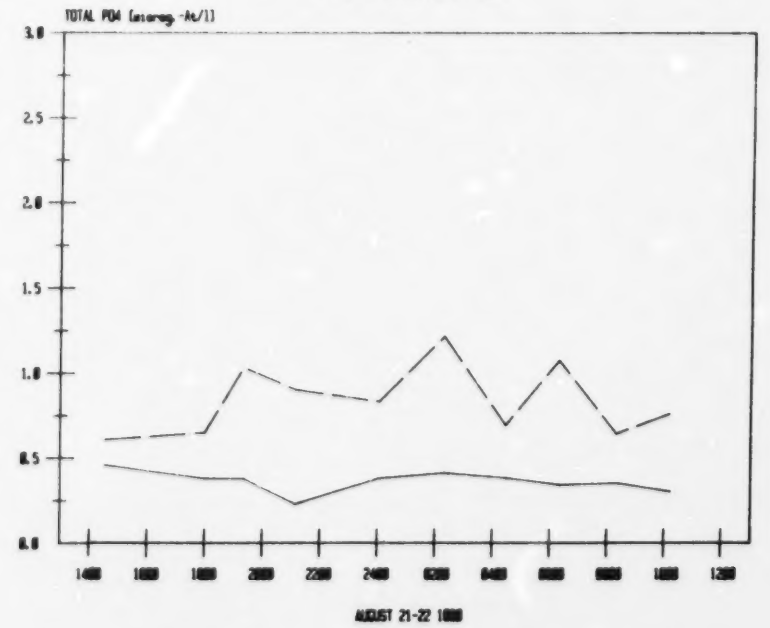
SURFACE

BOTTOM

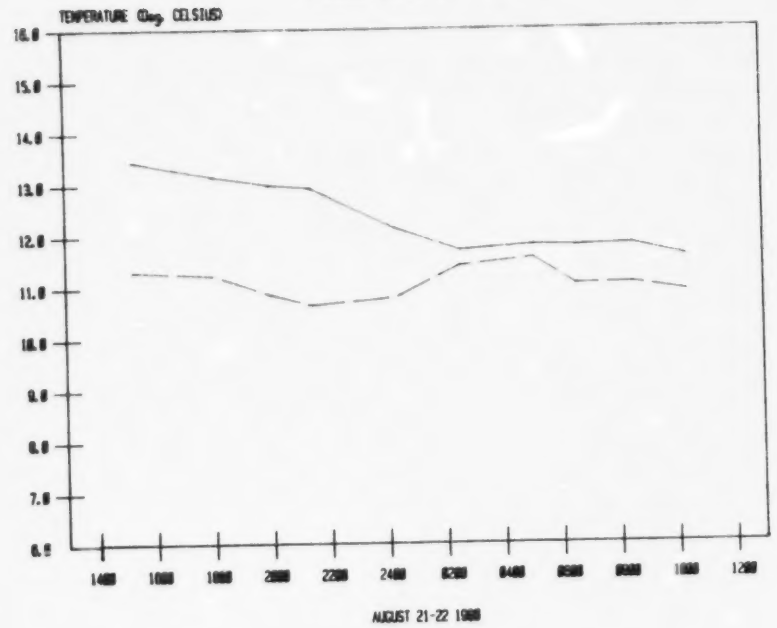
TOTAL N (as NO3, NO2) FOR STATION C



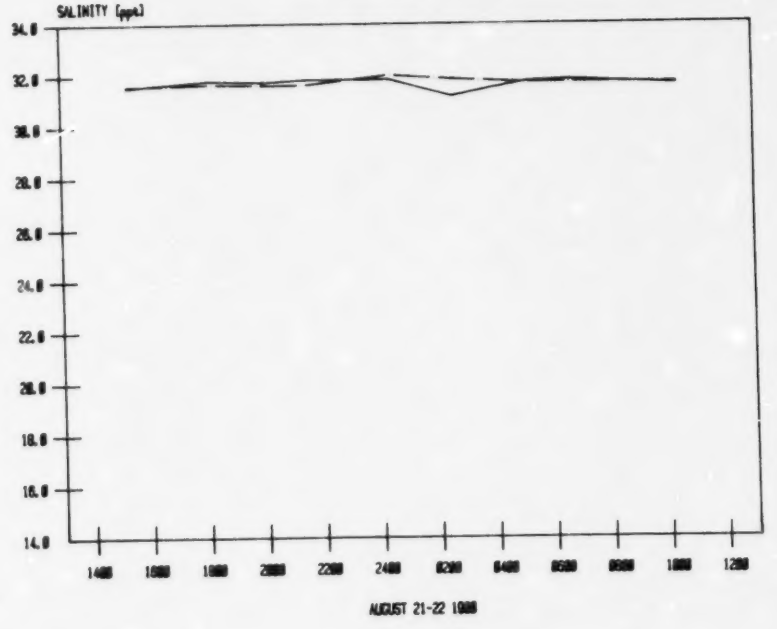
TOTAL PO4 VALUES FOR STATION C



TEMPERATURE VALUES FOR STATION G



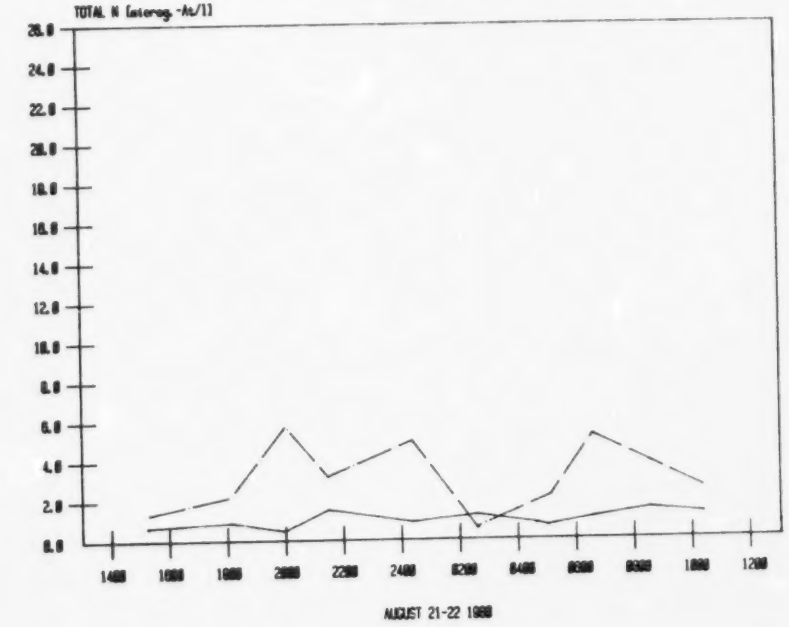
SALINITY VALUES FOR STATION G



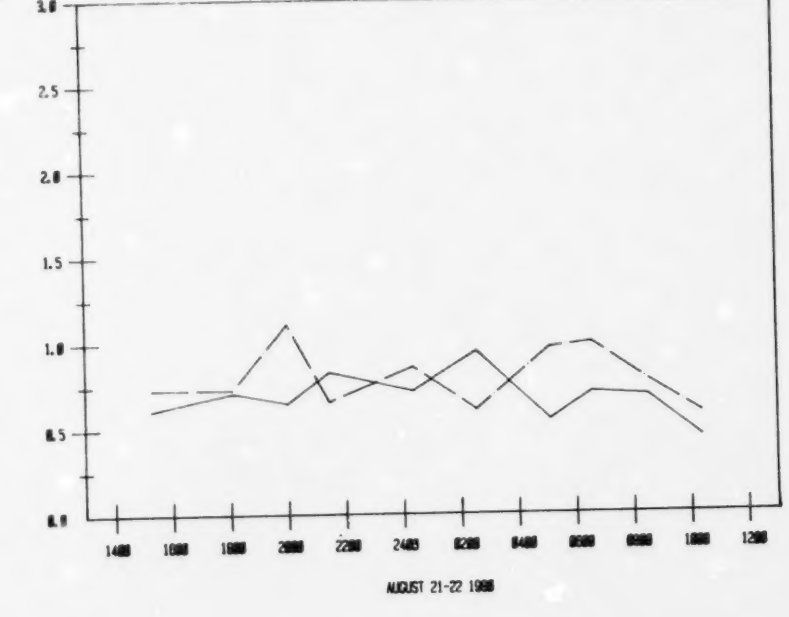
SURFACE

BOTTOM

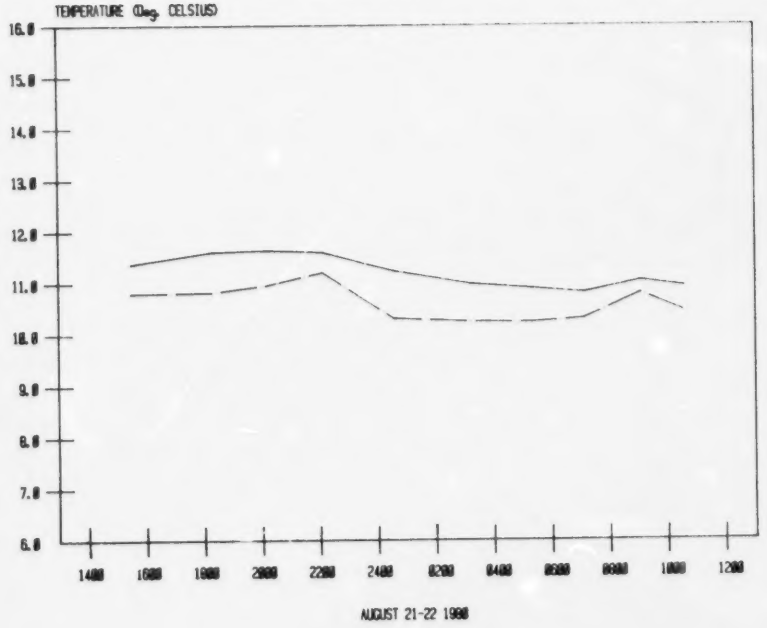
TOTAL N (as NO3, NO2) FOR STATION G



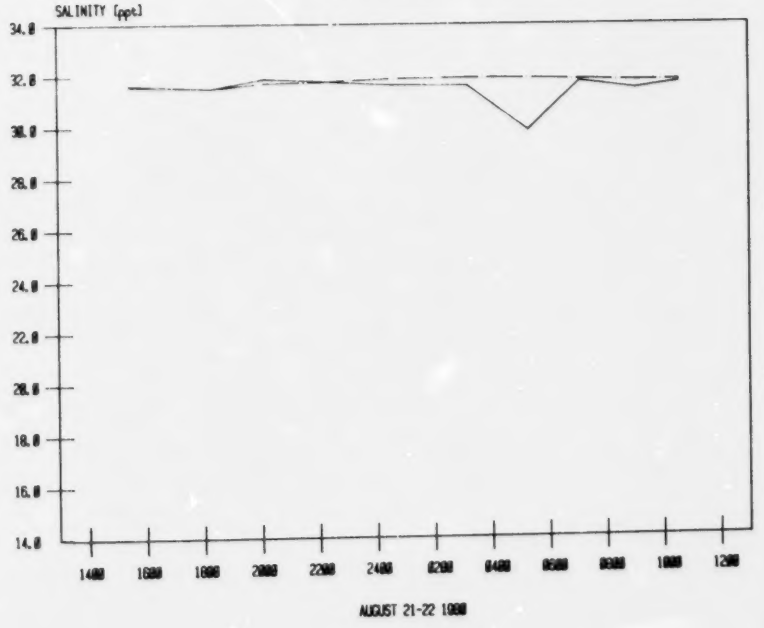
TOTAL PO4 VALUES FOR STATION G



TEMPERATURE VALUES FOR STATION J



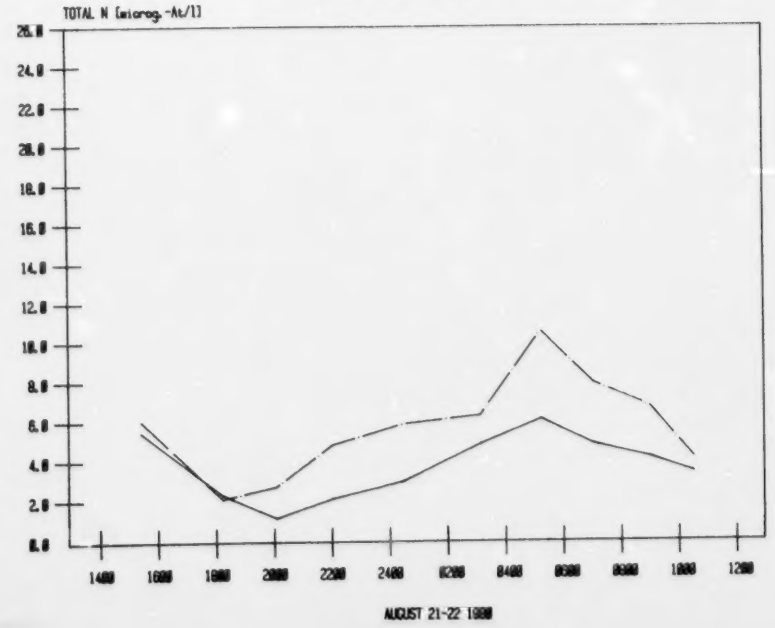
SALINITY VALUES FOR STATION J



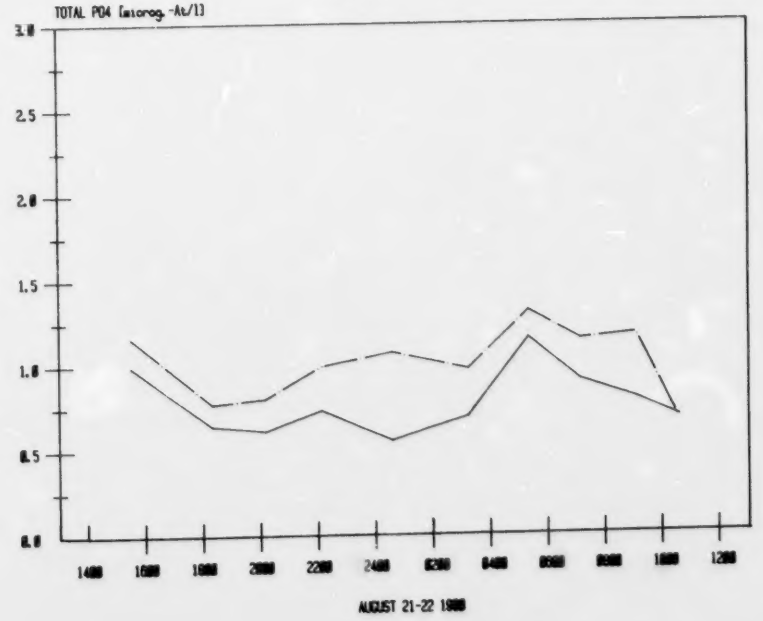
SURFACE

BOTTOM

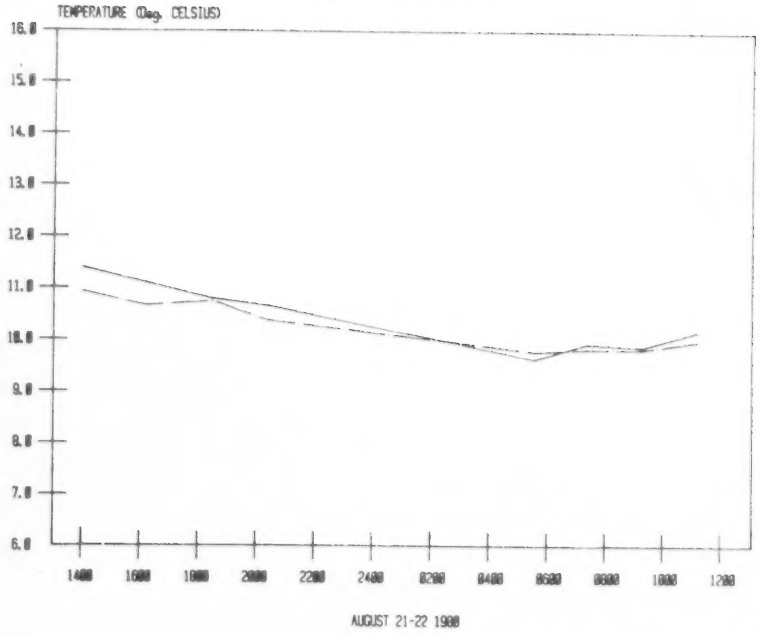
TOTAL N (as NO3, NO2) FOR STATION J



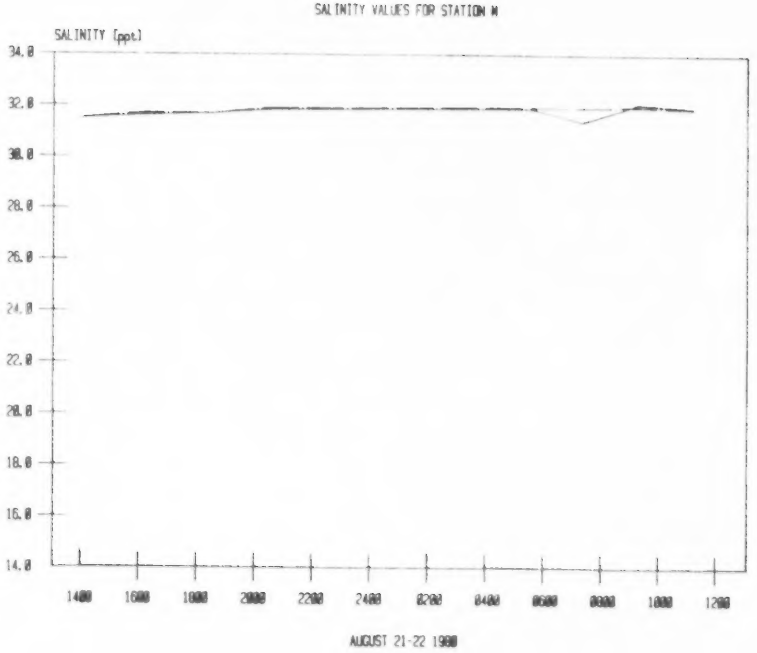
TOTAL PO4 VALUES FOR STATION J



TEMPERATURE VALUES FOR STATION M



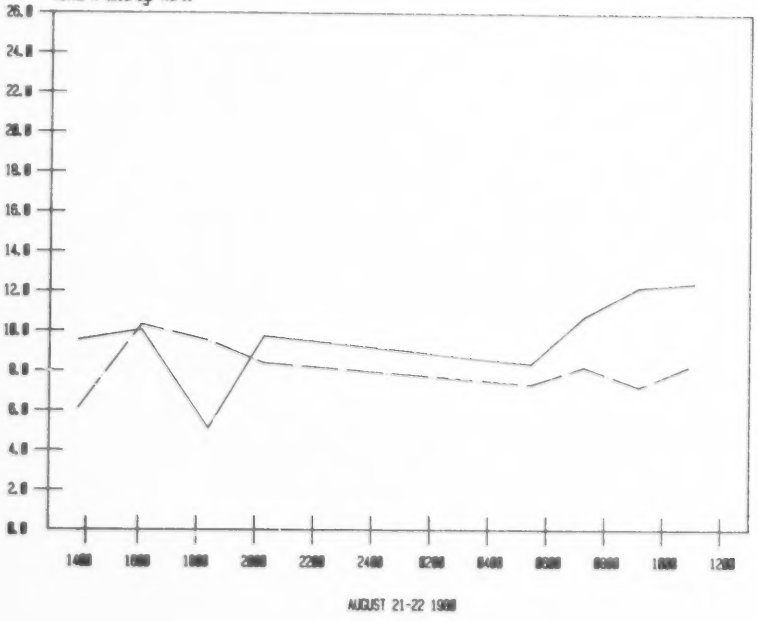
SALINITY VALUES FOR STATION M



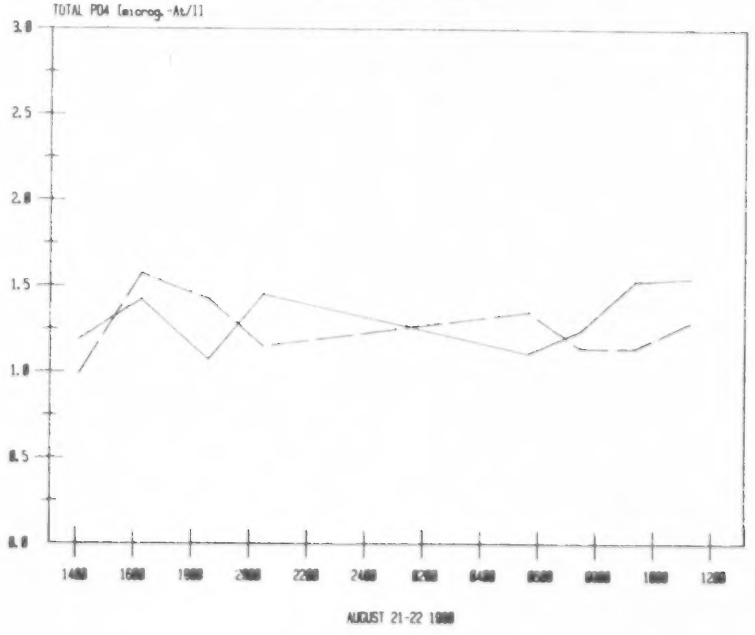
SURFACE

BOTTOM

TOTAL N (as NO3, NO2) FOR STATION M

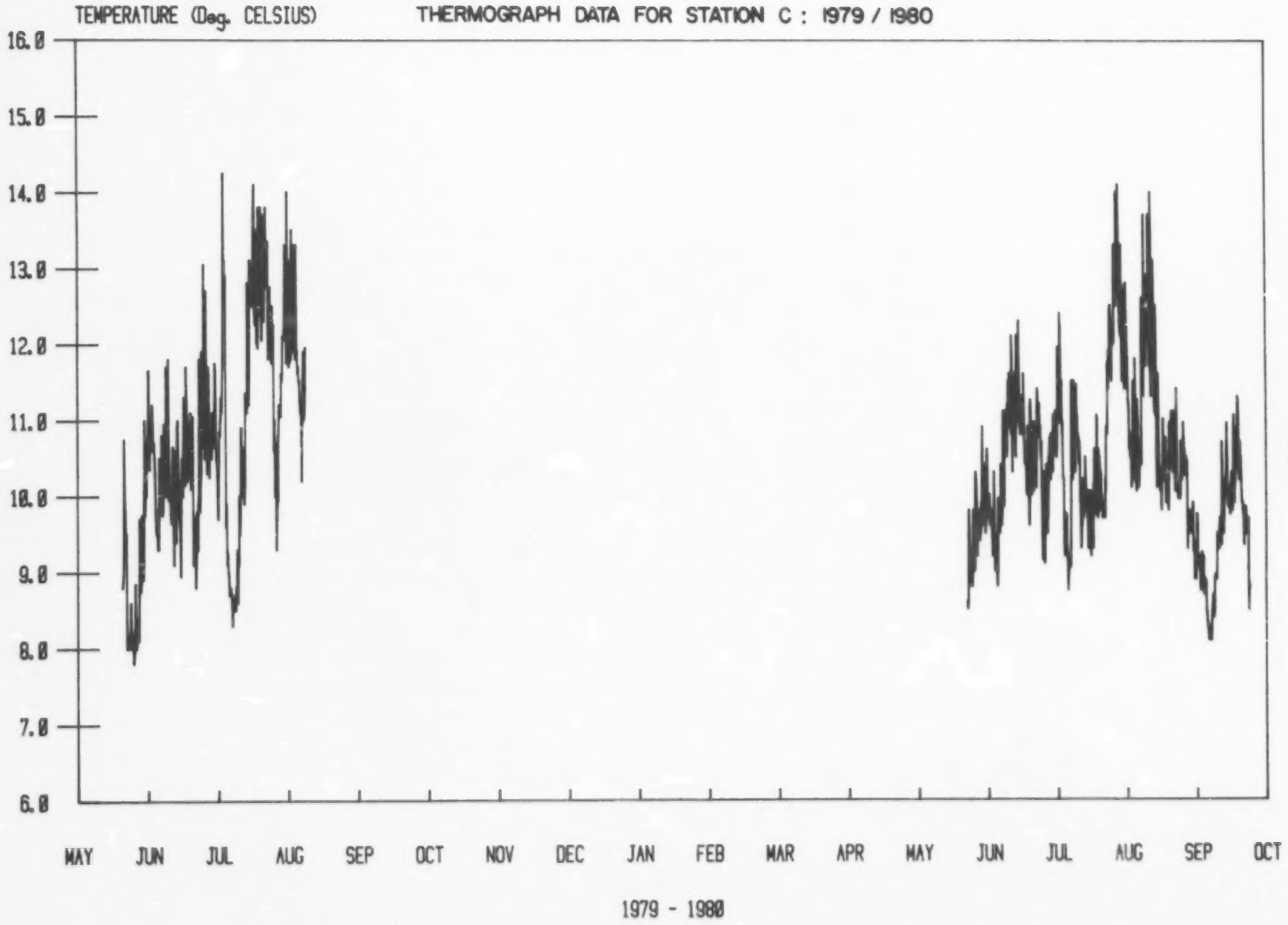


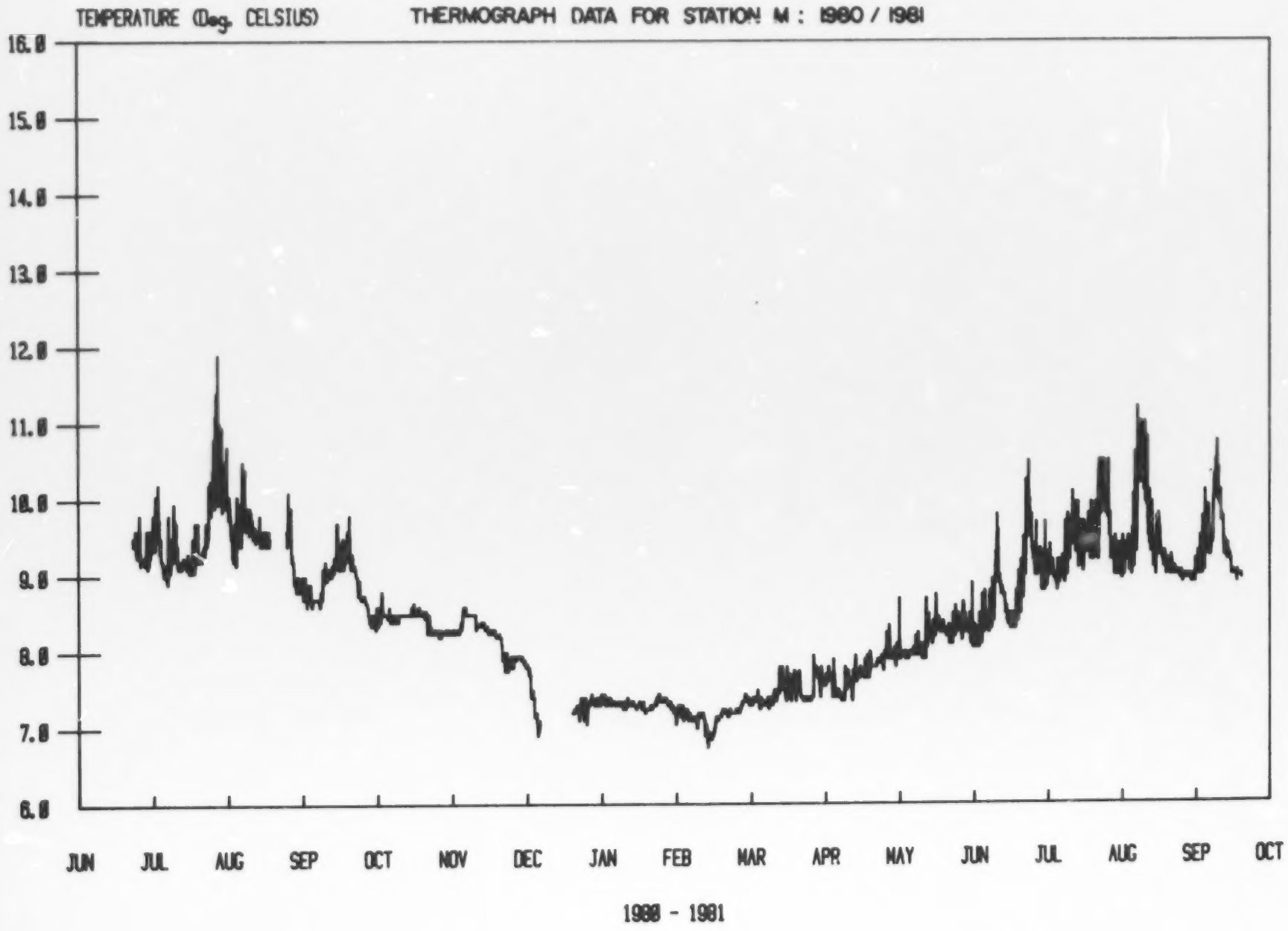
TOTAL PO4 VALUES FOR STATION M



APPENDIX VIII

Time series graphs of temperature at Stations C (May - August, 1979 and May - September, 1980) and M (June, 1980 - September, 1981) as recorded by Ryan J-180 thermographs.


TEMPERATURE (Deg. CELSIUS)
THERMOGRAPH DATA FOR STATION C : 1979 / 1980
16.0
15.0
14.0
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
1979 - 1980


TEMPERATURE (Deg. CELSIUS)
THERMOGRAPH DATA FOR STATION M : 1980 / 1981
16.0
15.0
14.0
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
JUN
JUL
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
1980 - 1981